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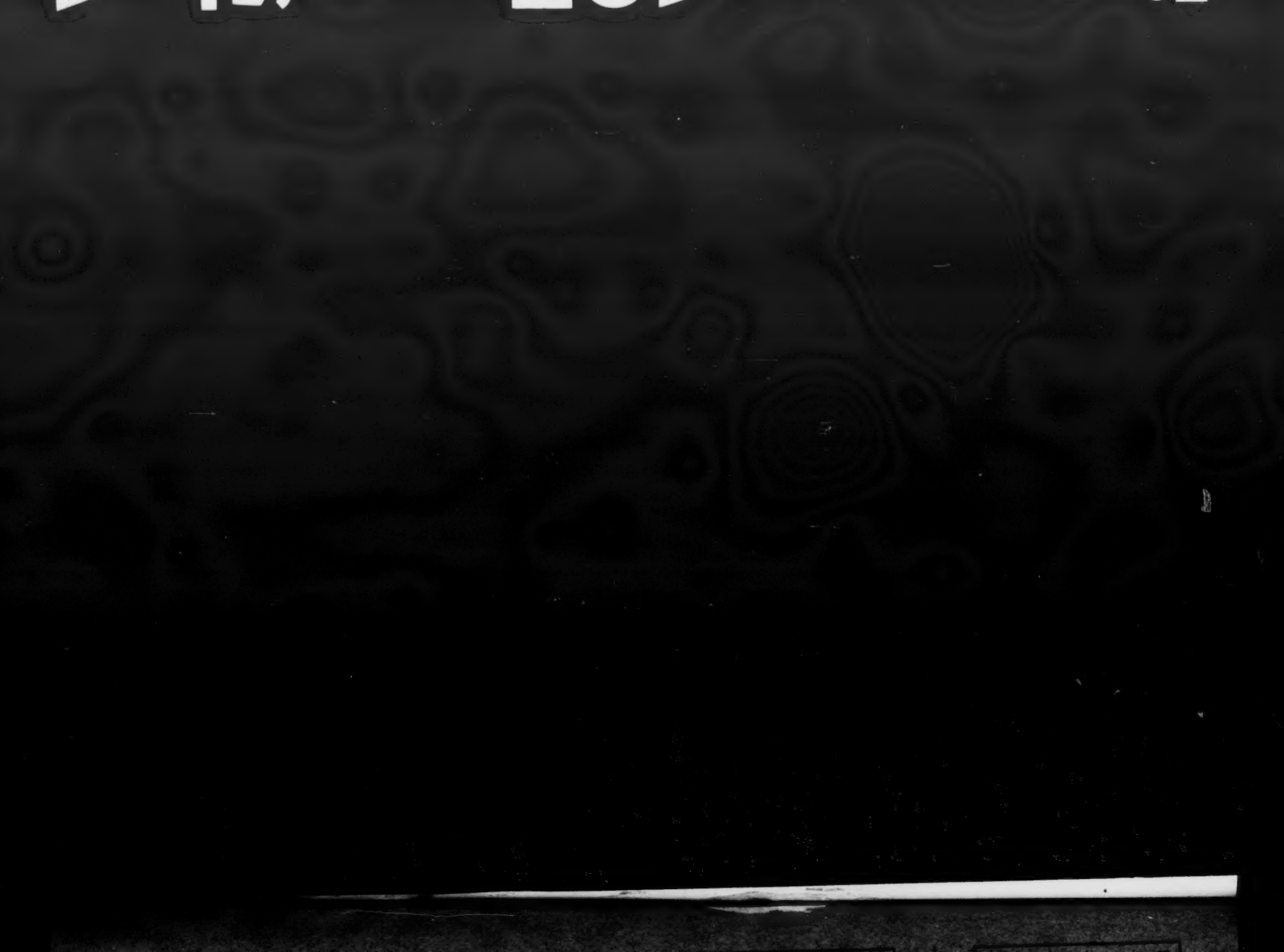

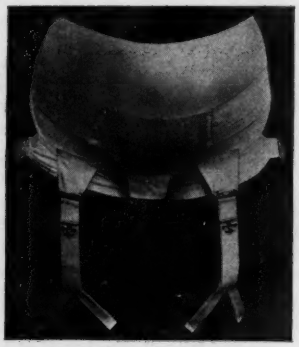

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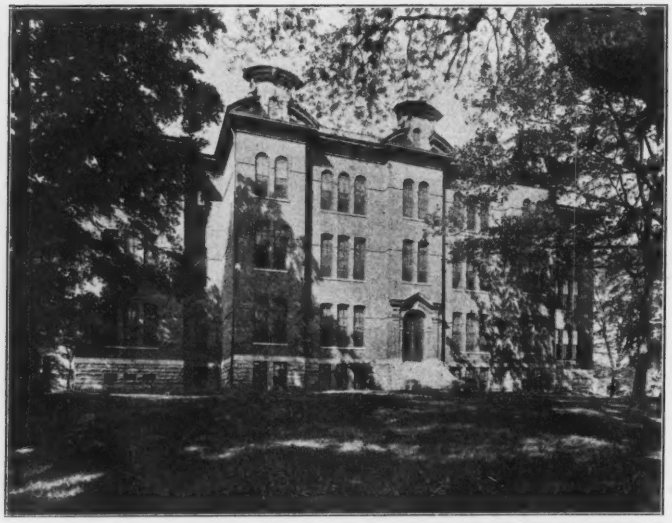

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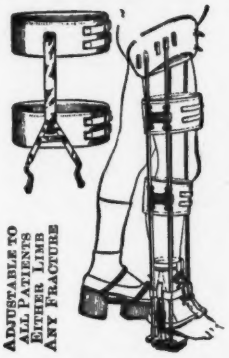

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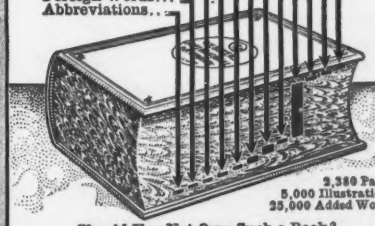

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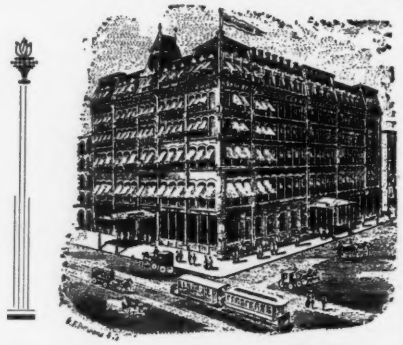

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SOUTHERN MEDICAL JOURNALS AND CLEAN ADVERTISING.

The medical journals of the South are setting a praiseworthy example in the matter of clean advertising. A little while ago we referred to the *Southern Medical Journal,* a new periodical recently started at Nashville, Tenn., and commented on the high stand taken by it regarding proprietary advertisements. Now comes the *Old Dominion Journal of Medicine and Surgery,* under entirely new management and editorial control, with similar high ideals. * * *

But if the medical journals above referred to and others of equal quality are to be conducted on the high plane outlined, and are yet to live, they must receive generous and adequate support from the profession. It takes cash to pay the printer and to meet the other expenses of publishing a medical journal, just as much as any other journal; and without it, success is impossible. There are two sources from which cash is derived—the subscribers and the advertisers. As regards the former it can scarcely be expected that a journal can be supported entirely by the payments of its readers, even supposing all readers paid their subscriptions promptly. An exception might be made in the case of such journals as, being highly specialized and appealing only to a limited class, are practically indispensable to the members of that class, and are thereby enabled to maintain a high subscription rate. On the other hand, the advertisers have always shown themselves more than willing to pay the bills; and in the case of very many journals—we say this deliberately—the advertising pages are practically the only source of income. To state it differently: a large number of medical journals are to all intents and purposes supplied gratis by the advertisers. Is it any wonder that the advertisers' desires are granted and their interests guarded more zealously than those of the subscribers, namely, the readers? We hope that physicians of the South, individually, will support the two journals above named, so long as they live up to their promises. These journals ought to be able to look to a paid subscription list for at least the major part of their support. There can be no doubt that the South has problems in medicine peculiarly its own. Enough excellent work is being done, and still more ought to be done, by the physicians of the South, to afford a valid reason for the maintenance of one or two high-class journals to present that work. So long, therefore, as they fill their reading pages with material of a quality as high as that which their initial numbers provide, and continue to live up to the standard they have set regarding advertising, so long will they have a right to look to their readers for such an adequate income from subscriptions as shall permit no excuse for the prostituting of the advertising pages that the literary columns may exist.

—Editorial in the Journal of the American Medical Association, Aug. 22, 1908.

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TREATMENT OF COMPOUND FRACTURES.

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Compound fracture may occur of any bone of the body, and is on account of the dread of infection, an injury of considerable consequence, and may be very serious. All exploratory and other effects must, if possible, be conducted under strict asepsis, it being remembered that there is no more active carrier of infection than the unclean hands and fingers of the surgeon.

In all such fractures, the clothing should be cut away, and where it is possible to do so, apply a wet antiseptic dressing or towel and bandage or fasten it to the wound before first moving the patient. If hemorrhage is severe, apply an Esmarch's tourniquet. It is also well before moving the patient to fixate the limb or part with a walking cane, piece of board or bundle of twigs. If the arm be the part fractured, it may be confined to the chest wall, which thus acts as a splint. If the lower extremity it may be firmly attached to its fellow with a handkerchief or some other form of improvised bandage, with suitable extemporized padding between. When the lower extremity, ribs, etc., are involved it will be necessary to carry the patient to his home or to some place where suitable treatment can be had. This can be done by sliding the patient upon a stretcher, a window shutter or light door, or a broad plank, or if the distance be such as to require it, he may be placed in an ambulance, a spring or other vehicle, and a reliable attendant being by his side to steady the limb. When a place suitable for the further treatment is reached, the patient should be placed on a table and all clothing not previously cut away, carefully removed. To avoid as much as possible moving the injured limb, it is preferable to cut off the shoe, etc., instead of pulling it off, as is sometimes done, especially by thoughtless assistants. By keeping antiseptic gauze pressed tightly against the wound the limb may be thoroughly cleansed with green-soap and water, and shaved. The area immediately adjacent to the wound should be shaved, douched with a 1000 to 2000 bichloride solution, and finally alcohol or ether poured over the part. In some cases where the injury is slight, cover the wound with a piece of sterile gauze before beginning the scrubbing, in order to prevent washing the germs from the surrounding parts into it. For the purpose of removing grease I find nothing so effective as benzine, which, like turpentine, has antiseptic properties.

Where I suspect infection has already occurred from the nature of the surroundings and the long time elapsing before seeing the patient, I use tincture of iodine, not only as a most reliable antiseptic, but it serves the purpose as a good hemostatic agent, also sears

the open ends of all lymphatics, tendons, sheaths and bursæ. It is claimed by a well-known authority that where tincture of iodine is used in compound fractures, there is no danger of tetanus.

A thorough investigation of the extent and nature of the injury will, in many cases, necessitate the administration of a general anesthetic, and, whenever it is practicable, use should be made of the X-ray. Bleeding vessels must be sought for and controlled, nerves united, and muscles and other torn tissues that are extensively contused and lacerated should either be removed or, if repair is considered possible, replaced in proper position and sometimes sutured. All foreign substances and detached fragments of bone that do not possess possibilities of uniting with the sound bone should be removed; and drainage should be employed, as it is essential in most cases. It may be necessary, in order to secure free drainage and to replace fragments of bone in their natural position, to make additional incisions, preferably along the longitudinal axis of bones. Sharp ends of bone, especially denuded of periosteum, should be cut off. Don't attempt to do too much at the first dressing. Extensive plastic work requires much time, and increases shock and the danger of sepsis, therefore the uniform custom of suturing all tendons and even sometimes nerves, can be left for a subsequent operation or after the wound has healed.

The general plan of suturing or wiring the fractured ends of the bone to obtain apposition, I can't agree with some surgeons, as always being good practice, from the fact it makes the prognosis more unfavorable on account of the disposition to necrosis. Of course, this objection would not hold where sutures are passed through a torn aponeurosis or tendinous covering of a bone, as in fractures of the patella.

All the steps required in the treatment of wounds unattended with fracture having been taken, the integument may be closed over the wound as efficaciously as possible, and a suitable fixation appliance adjusted. At the same time the importance of leaving the wound accessible for future dressings, without the necessity of disturbing the immobilizing appliance, must not be overlooked. The question of immobilizing the limb or part requires often the greatest amount of ingenuity.

No two cases are exactly alike, the different complications and therefore varying requirements are innumerable. Any splint which holds the fragments in proper place will in addition to allowing inspection, and dressings made to the wound without disturbing the retention apparatus, and at the same time not interfere with the wound secretions or drainage, would be regarded as satisfactory. The frequent changing of the splint in compound fractures is apt to interfere with proper apposition and lead to non-union or the development of an excessive amount of callus.

If a plaster-of-Paris immobilization is to be used, the wound should first be covered with a dry dressing, and over this should be laid a piece of oiled silk or rubber tissue large enough to extend some distance beyond it; the whole being confined in place by a gauze bandage. Then, after the limb or part has been properly covered with gauze or cotton-batting, over the whole a plaster-of-Paris bandage should be applied. Before the plaster completely hardens, however, a fenestra should be cut out at a spot corresponding to the site of the fracture, but the cutting must extend only down to the oiled silk or rubber tissue and not through it. After the fenestra has been made, or at the next dressing, slits should be cut in the oiled silk or rubber tissue in such a manner that it can be reflected back over the edges of the fenestra and fastened, in order to prevent infection of the plaster borders at this point by the discharges from the wound.

Drainage tube or whatever else that may be used in its place can be removed as indicated

by the appearance and healing of the wound. The great majority of cases thus treated will recover promptly without further special attention.

Compound fractures due to the crushing violence of the wheels of railroad cars and heavy-laden vehicles usually come promptly to amputation, because of the great extended violence done the soft parts and the comminuted state of the bones.

The question of amputation in compound fractures is one that requires very careful consideration on the part of the surgeon. Briefly stated, the following conditions may be considered as justifying amputation, although it must be remembered that, under the present modes of aseptic and antiseptic wound treatment, conservative measures may, even in cases of the gravest import, be attended with gratifying results. If, owing to local or constitutional conditions, extensive suppuration persists, notwithstanding the fact that every thing possible—free incisions, perfect drainage, and irrigation—has been done to arrest the same, amputation may be required in order to save the patient's life. If there has been extensive destruction of the soft parts, with or without injury to the large blood-vessels and important nerves, or if the bone has been injured to such an extent that when union of the available fractured ends takes place there will be a shortening so marked as to render the limb useless; or, finally, if gangrene should develop as a result of injury to the vascular supply, amputation is generally accepted by surgeons as the best treatment. The location of the injury, the age, sex, and occupation of the patient, and the degree to which an artificial limb may act as a useful substitute for that which has been damaged, are matters which call for careful consideration in these cases. The final decision with regard to the use of an artificial limb should be left to the patient. It must be borne in mind that, while it is important to save a limb or even a part of it, life is more important still, and that primary amputation will in many instances be preferable to secondary. Nevertheless, it is best not to reach a conclusion too hastily.

DECOMPRESSIVE OPERATIONS FOR THE RELIEF OF INTRACRANIAL PRESSURE, WITH REPORT OF CASES.*

BY GASTON TORRANCE, M.D.,
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Although the work of Cushing and Spiller and Frazier has brought cerebral decompression more prominently before the profession in the past few years, it is not a new operation.

Annandale reported, in 1894, that he had operated about 1870 on a patient with symptoms of pressure, without finding any special lesion, with relief of the pressure symptoms. He stated that Lister had operated successfully on a similar case. He trephined a case in 1889 with severe headaches following an injury years before, with a perfect cure. He says the operation relieves the pressure and in some instances the growth shrinks or degenerates.

Macewen, in 1889, trephined a case of tubercle of the cerebellum with instant relief to the patient, and removed the growth a week later.

Sahli, in 1891, reported some work along these lines, with marked improvement in the condition of the patients. He prefers several small trephine openings to one large one.

White reported a number of cases of epilepsy, the same year, that were very much improved by decompressive operations, although no lesion of the brain was found.

Horsley reported cases, in 1893, relieved of the headaches and nausea with subsidence of the swelling of the optic discs. One case lived 18 months and another for 2 years with comparative comfort. He has noticed that in some cases simple opening of the skull had caused the tumor to degenerate.

Jaboulay, in 1893, trephined a case of tubercle of the brain without opening the dura with good results.

Keen, in 1892 and 1894, removed a portion of the skull to relieve severe headaches with satisfactory results.

Putnam said in 1895 that he had seen a patient that had been free of pain for many years following a simple opening of the skull.

Ludwig Bruns (1897) says a large opening should be made in the skull with excision of the dura, which allows the tumor to protrude and remove pressure from the lymph vessels of the brain. The general symptoms disappear quickly, consciousness returns, headache, vomiting and choked discs disappear.

Clarke and Morton (1896) reported a case that was much benefited by the removal of a large area of bone without incising the dura.

Alfred Wiener (1898) had a case temporarily relieved by trephining and allowing the tumor to bulge through the bone defect.

Babinski reported several cases in 1901 that were much improved by operation; the headache, vomiting and the choked discs disappearing almost immediately.

Leslie Paton collected 30 cases operated on in which vision was saved in 22 and in 18 was as good as before operation. He advises excision of the dura in all cases.

Codman thinks (1905) that for brain tumor, the palliative operation only is justifiable in the hands of the average surgeon.

Cushing's paper, reporting his work on decompression for inoperable tumors, was published in 1905, and for bursting fractures of the skull in May, 1908.

Spiller and Frazier (1906) report two cases operated on by Keen. One was a man with failing eyesight, severe headaches, vomiting and extensive optic neuritis; an osteoplastic

*Read before the Jefferson Medical Society September 21, 1908.

operation was done in 1901 and in 1906 he wrote that he was relieved as to the pain, but could only distinguish day from night. They report 14 cases of their own—of 12 cases operated on at the University Hospital II, by Frazier, and one by Martin, all recovered. Their first operation was done in 1898 and the last on March 20, 1906. In only one case did the operation fail to relieve the symptoms operated for. Without exception the choked discs subsided in every case; in three instances the optic neuritis had gone so far as to render the patients totally blind. The choked discs subsided just as quickly where the dura was left intact—in fact the case in which it subsided most quickly (observed by de Schweinitz) the dura was not touched. In some cases the dura was incised for exploratory purposes, but in nearly every case it was sutured up again.

Indications for Decompressive Operations.—Brain tumors that can not be located or that can not be removed, basal fractures or other head injuries that show compression, some cases of epilepsy (2%, according to Starr), and in edema of the brain from nephritis, are suitable cases for decompressive operations.

Cushing says that by far the greater number of brain tumors, with our present knowledge, can not be localized, and of those whose seat can be approximately told, but few prove surgically accessible, and when accessible, only a small proportion can be wholly removed, leaving the patient free from paralysis, and with mental faculties unimpaired. He thinks the tumor should be eneucleated whenever possible, using an osteoplastic flap. Ransohoff says only six per cent. of brain tumors can be located.

Sir Victor Horsley (1906) says in no case of optic neuritis (not toxemic or anæmic) should the process be allowed to continue after it has been diagnosed and that if blindness results therefrom the responsibility is very heavy on any one who fails to advise so simple a proceeding as opening the dura mater. He thinks the optic neuritis begins on the side of the lesion.

Knapp is less optomistic, and says as to the so-called paliative operations for relief of headache and optic neuritis, only about 50 per cent. of the cases are relieved; the others continue to have headache and become totally blind.

Symptoms of Compression.—The headache, vomiting and choked discs are almost invariably present with a slowed pulse and raised blood pressure.

Cushing says intracranial pain of some form or other is rarely absent and may be insufferable. Rapid loss of weight and strength may follow the vomiting, and this more than any other symptom keeps the patient in bed, as it is aggravated by the erect posture. Blindness is more to be feared than the other symptoms, and especially in tumor of the cerebellum, as the optic atrophy is likely to be an early involvement. A general venous stasis is the first effect of the intracranial pressure, and this is increased by a growth so situated as to interfere with the outflow of the cerebrospinal fluid from the ventricles. This venous stasis probably causes the edematous condition of the optic papilla, which is not a neuritis of an inflammatory character.

Cushing thinks the headaches are probably dual in origin and are due to stretching of the trigeminal filaments which sensitize this membrane—since it has been proven that the dura and brain tissues are not sensitive to pain, he has probably modified this conclusion. He suggests that the nausea may be due to irritation of some center in the brain, which leads to emptying the stomach or less likely to stimulation of the vagus center.

Cushing says there are two ends we should seek to accomplish in this operation—one to establish the hernia over as "silent" or unimportant an area of the cortex as possible, and to avoid an unnecessarily large protrusion. A small trephine opening is useless, and a large defect must be made, and all things being

equal the larger the better. The defect should be made in the cranial vault in tumors of the hemisphere and in the suboccipital region in tumors below the tentorium.

Operation.—A horse-shoe flap is cut with base down, over the posterior half of the parietal and extending a short distance down over the adjoining portion of the occipital bone; the underlying dura and bone are removed and the skin flap sutured back in place.

In the temporal intermuscular method, a curved incision is made about over the parietal eminence, running forward almost to the hair line, and posteriorly a little lower down; the fibres of the temporal muscle are separated, and after removing the desired area of bone, the muscle is sutured together again and prevents an excessive bulging of the brain. In operating for fractures involving the base of the skull in which drainage may be used he advises making the incision in the direction of the muscle fibres. In the suboccipital operation a cross bow incision is made over the center of the occipital bone, and after making the defect it is sutured up in layers.

Cushing reports 15 bursting fractures with two deaths treated in this manner, against a mortality of 50 per cent. by the expectant method. He also claims that the unpleasant symptoms that often follow in the unoperated cases are absent or much less frequent.

Report of Cases.—An Italian boy, 15 years of age, was sent to me in June, 1907, to be operated on for the relief of epileptic convulsions. He was a fairly intelligent boy, about the size of the average boy of 12 years' old. No history of epilepsy or insanity in his family; no history of injury at or since birth. He began to have convulsions seven years ago; often had three in one day, and might go for several weeks without any trouble; did not have headaches; had never had any serious illness. Under ether a flap was turned down over the left temporal region and an area of bone about 2 by 1½ inches was removed without opening the dura. He had one slight convulsion after the operation. When last seen six months or more after operation, he seemed to be in perfect health and had not had any more convulsions and seemed much improved mentally, and said to me, "Doctor, I've got more sense than I had before you operated on me."

J. H., a colored miner, 40 years of age, was struck on the left side of his head on July 12, 1908. He had not been clear mentally since the accident, and had lost the power of speech, had paralysis of the right arm and leg and left side of the face. Operation three days after injury; incision made over the left temporal ridge; defect made in skull about one and a half inches square; linear fracture and very small subdural clot found.

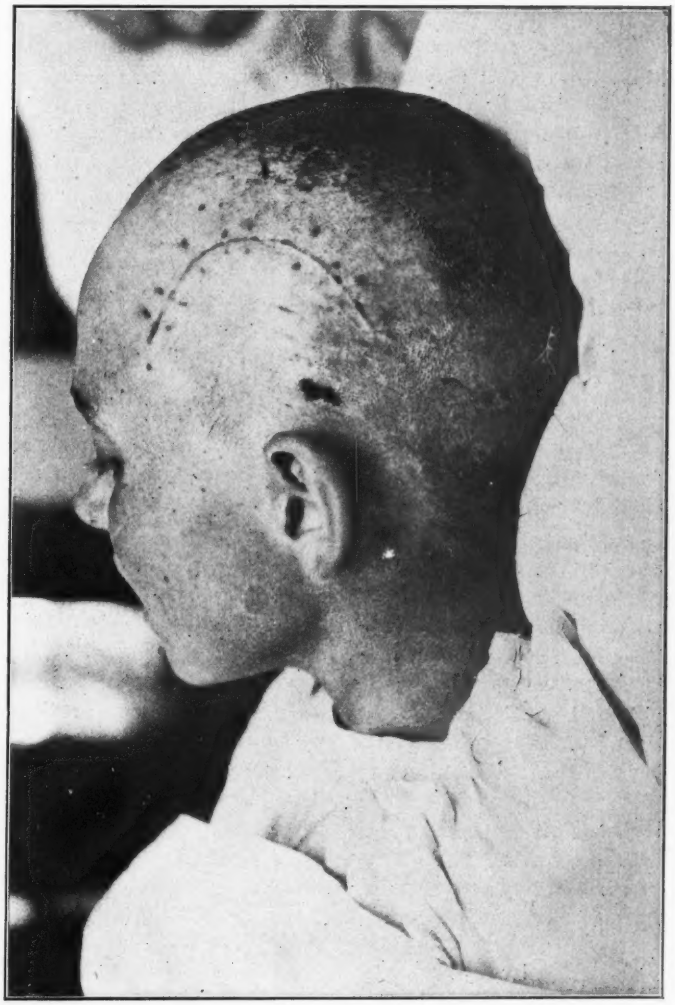
The brain was anæmic and unhealthy in appearance; small wick of gauze used as a drain for a few days. At the end of three weeks his paralysis was clearing up and he would answer when spoken to.

D. U., a white farmer 23 years of age, was referred to me by Dr. Oxford, of Walker county, June 22, 1908, with the history of having struck his head in the region of the frontal suture, against a beam while entering a building, two months before. His mental condition had been impaired ever since this time. He became delirious at times. Complained of some pain over the left temporal region.

Under ether a curved incision was made over the anterior portion of the left parietal bone, and an area of bone about one and a half inches in diameter was removed with the underlying dura which was adherent to the brain; the brain was anæmic and pulsated very little; a small gauze wick was used for a drain. The wound healed by primary union and when discharged three weeks later he seemed much improved.

E. R., a white boy 12 years of age, was injured in a cyclone at Burgin, Ala., on April 4, 1908. There were some slight lacerations of the legs, but no wound on the head was

found; he was in a semi-conscious condition when brought to the hospital; there was no paralysis or slowing or marked tension of the pulse; the right eye showed a partial congenital irideremia. The eyes were examined by Dr. C. A. Fox, but no marked change in the retina was noted. He became more conscious in the course of a few days and seemed to be improving, but was unable to utter a sound. Ten days after injury he developed paralysis, with loss of sensation in the right arm and leg and left side of the face. As his parents and all of his family, except one little sister, were killed in the storm, it was not necessary to communicate with his grandfather before an operation could be done; this delayed us for several days.



Under ether a curved incision (see photograph) was made over the temporal ridge and a rectangular area of bone removed from

the anterior portion of the parietal and temporal bones about two by one-and-a-half inches. There was some bulging of the dura, and when this was excised, there was a considerable amount of fluid evacuated; the brain was very anæmic, and did not pulsate; no clot was found. A small opening was made through the base of the flap for drainage. Three weeks after operation he began to answer when spoken to, and could laugh and there was a marked improvement in the paralyzed limbs. At the end of three months' time he had complete control of his limbs and could say anything he wished, but his speech was more deliberate than normal. He has since made a complete recovery.

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PELLAGRA, WITH REPORT OF CASES.

BY J. M. KING, B. S., M. D., NASHVILLE, TENN.

This dreaded disease, which has played such havoc with the inhabitants of Northern Italy, Spain, and other sections of Europe, has at last made its appearance among the inhabitants of the United States. It has occurred, according to report, in two State Hospitals for the Insane in the Southern States—The Mount Vernon[1] Hospital for the Insane in Alabama, and in[2] the State Hospital for the Insane at Columbia, S. C. It no doubt exists in orphanages and other institutions of this character, but has not been reported or recognized. There have been a few sporadic cases reported in the United States. In 1883 Sherwell[3] reported a case observed in a Genoese sailor in New York. In 1907[4] Dr. T. C. Merrill reported one case from Colorado, Texas. A case with photograph is reported by Dr. N. M. Moore[5], from Augusta, Ga. We shall probably soon have more reports now that the question is opened. On account of the extreme rarity of the disease and the difficulty of diagnosis, the profession of the South should make a study of it, in texts on the subject.

In this report I shall describe the condition in which the children were found when first seen by me in June, 1908. They were inmates of an institution of charity, to which forty-nine children belonged. Eleven were affected; one had died, the one who introduced the disease, making twelve in all. They presented the characteristic skin lesions, in a mild form. There was a diffused erythematous eruption on the backs of the hands, extending on some nearly to the elbow, on the face, especially about the cheeks, also on the neck and shoulders. The tops of the feet and (see photo) nearly to the knees were also red with some exfoliation. The skin was slightly thickened in the oldest cases, wrinkled, and rough.

In one, the latest case, the erythema on the feet was slightly visible over an area about the size of a dollar—about midway of the top of the foot. There was nothing on the hands. The diarrhœa had appeared in two of the children—the one who died and her brother Roy M., about whom more will be said.

The nature of this disturbance was something new in my experience, and the history was interesting. The first case appeared three years ago, but it seems that the matter was kept very quiet. Addie M. was the first to present the eruption. In the spring-time she was out at play with a low-neck dress on, and when she came in the nurse observed an eruption similar to a bad sunburn. This did not heal, but remained bad all summer with slight improvement in the fall. She then left the institution for a short time, and was returned sick. The eruption about the face, neck and shoulders became much worse; she suffered from severe stomatitis; some teeth were removed, the diarrhœa began, and was very aggravated and offensive. She slowly passed away, about eighteen months after the first signs of the disease appeared. It next presented itself in her brother and sister, Roy M. and Anna M., and this was followed by the appearance in the other children in the springtime. The sun is an active factor in producing the eruption. Of the eleven remaining children, two are now troubled with diarrhœa.

The authorities of the institution granted the privilege of taking two of the worst cases to St. Thomas Hospital—Roy M. and Charley T. The photograph of the two boys shows

Anna M. stands next to the boy. The tallest boy is her brother.

Anna M. stands next to the boy. The tallest boy is her brother.

Roy M. Charley T.

Note line of demarkation at wrists and knees.

how they were affected when they entered the hospital. The treatment consisted of a daily bath with green soap, daily anointment with vaseline, full diet, with elixir iron, quinine and s. and Fowler's sol. after meals. Their improvement under this treatment was prompt, and within two weeks Charley was clear of any skin lesion, and Roy presented very little erythema. They returned to the home. Charley has had a mild relapse, while Roy is in a worse condition; his face and neck are red and scaly, and he has slight photophobia. His hands and feet are very red, scaly and badly chapped, and the skin is thick. His bowels are loose. Recently he was found in the yard lying on the ground in an opisthotonic position, and after this signs of vertigo were present for a few days.

Recently the affected children have been removed from the home, and isolated for special treatment—practically the same as that the two boys received at St. Thomas Hospital, with the addition of taking three Fermenlactyl tablets daily after meals. It occurred to me to endeavor to try the Fermenlactyl with a view of planting in the alimentary canal a pure strain of lactic acid bacillus with hope of some relief.

The disease has been known since 1735 in Spain, when it was first described by Gasper Casal under the name of *"mal de la rosa."* It has been known by many names, as *"mel del sole,"* "sunstroke of the skin," both implying that the sun was the cause, but the real cause has not yet been discovered. The sun probably has some influence in the development of the organism, if such be the cause. It has been thought from the earliest cases that damaged maize contained the organism which produced the disease, and with this in mind re-

Anna M. The backs of her hands were red, the skin was thicker than normal, and very much wrinkled.

search work has been done along this line. The Italian[7] Government is now spending large sums in research examining the fauna and flora of the stored maize.

Anna M. Shows line of demarkation and exfoliation.

The method of transmission is not understood. It is not believed to be contagious, but cases of conjugal pellagra have been reported. With reference to this report the disease may be traced to one inmate, or to one family, about whom very little can be learned previous to their entrance to the home. I wrote a personal letter to their family physician, with no reply. The investigation on the part of the authorities of the home was futile. Of this family one child has died and three others are affected at present—one girl and two boys—and one of the boys, Roy M., is the most aggravated case in the home. It seems that something has been kept in reserve by the family—whether the father or the mother were affected is not known. To say the least, under observation of this home, the disease has spread from this family. Annie M. waited on Addie M. during her sickness.

Sambon,[6] after reviewing the research work up to 1905, states that the disease probably is protozoal. It may be that maize, damaged or sound, furnishes the habitat for the organism in Italy and in other parts, while it may be conveyed on some other article of food in other parts of the world, for in some sections where the disease is prevalent maize is used but little as an article of food.

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BLASTOMYCOSIS, WITH REPORT OF A CASE.

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Until a few years ago the yeasts and other allied forms of life stood alone as being devoid of pathogenic properties. But it remained for Busse in 1894 to first publish the results of a fatal case of pyemia with papillomatous cutaneous manifestations in which a yeast was the sole pathogenic agent. The autopsy showed numerous broken-down nodules on several of the bones, in the lungs, spleen and kidneys. The yeast was cultivated from all these foci.

To Gilchrist, of Baltimore, we owe the term "Blastomycetic Dermatitis," he having, several months previous to the report of Busse, demonstrated before the American Dermatological Association, microscopic sections containing budding yeasts obtained from a lesion diagnosed as scrofuloderma. Later communications rapidly followed by Curtis, Bruschke, Hyde, Montgomery, Hektoen, Bevan, and many others, until the list of reported cases possibly number one hundred of true "Blastomycetic Dermatitis."

The distribution of this very peculiar disease is extremely unique from a geographical standpoint. Its home so far appears to be largely confined to a few localities in America. The city of Chicago and its vicinity seems to be the hot bed for this malady. The appelation of "Chicago Disease" has been aptly given to it, for the reason that more cases have been reported in that city and its contiguous territory than the combined cases of the world. Scientists throughout the country have diligently but vainly labored to ferret out the reason for the enormous preponderance of the disease in that city. Efforts have been made to discover some relationship of the disease to certain occupations, as the handling of grain, farming, particularly the handling of manure, but thus far facts do not throw any light on this subject. The following distribution of this disease gives some idea of the extreme rarity of this affliction in certain localities. In New York the first and only case was reported by Coley and Tracy in 1907. In England, the first case by Sequeira in 1903 and only one other has been reported since then. The first French case occurred in 1904, reported by Dubreuilh, and the first Japanese case was described in the Archives in 1906 by Sakurane. Four cases in Germany complete the list in that country, while only one has ever been reported from Argentine Republic. The above shows that the malady has occurred in almost every country. Certainly it is more frequent than reported cases would indicate and undoubtedly many cases have been diagnosed as tuberculosis, not only from the clinical, but from the post-mortem findings, because of its close similarity to it. This condition has not only been thoroughly established as a distinct clinical entity but the disseminated or generalized variety must be reckoned with as well, for the occurrence of these cases in which not merely the skin, but also the viscera were involved, cases in fact in which the skin was secondarily attacked, present a condition markedly related to the interesting but fatal affection occurring in certain localities in California, and described as Protozoic infection, or "Coccidiodal Granulosum."

Brown[2], of San Francisco, has very recently reviewed the literature of the "California Disease." He was able, with a report of two additional cases of his own, to collect in all, 18 cases. Up to the present time only two cases have been described in persons who had not been in California; one by Wernicke, who, in 1892, recorded the first and only case in

Germany; the other one by Wolbach of Boston. The disease is an exceedingly fatal one, and only one patient is known positively to be alive. In this patient the primary lesion was in the foot, which was promptly amputated. The geographical distribution of these 18 cases simulates the "Chicago Disease," in that they are confined to a certain locality. Fourteen are positively known to have resided in San Joaquin Valley, Cal. Therefore, the micro-organism has often been termed the San Juaquin Valley parasite. There is undoubtedly an exceedingly close cultural relation between this organism and the Blastomycetes type. In the case of the former the organism develops by endogenous spore formation, and not by budding, while in the latter the only way of multiplication in the tissues is by budding. The Oidia, another very closely related organism to the two above, occupy an intermediate relation between them. They multiply by budding in the tissues, but produce mycelia in cultures. There seem to be a great many species in this group, some in which budding is more pronounced than the formation of mycelia. Several cases have been recorded under the title of Oidiomycosis. Perhaps the latest and most exhaustive monograph on this subject is by Coley and Tracey[3], in which they report a case of their own. Prof. James Ewing, who has made a careful study of the organism as well as the sections from the tumors from the above case, expresses the opinion that it belongs to the intermediate group of true Oidia. He further states that still much further study will be required before it can be finally classified. Wm. Ophuls, of San Francisco, believes with Rickett, of Chicago, both of whom are authorities on this subject, that it would be much preferable to classify these cases with the Oidia rather than with the Blastomyceses. Prof. Hektoen, in an excellent article in the

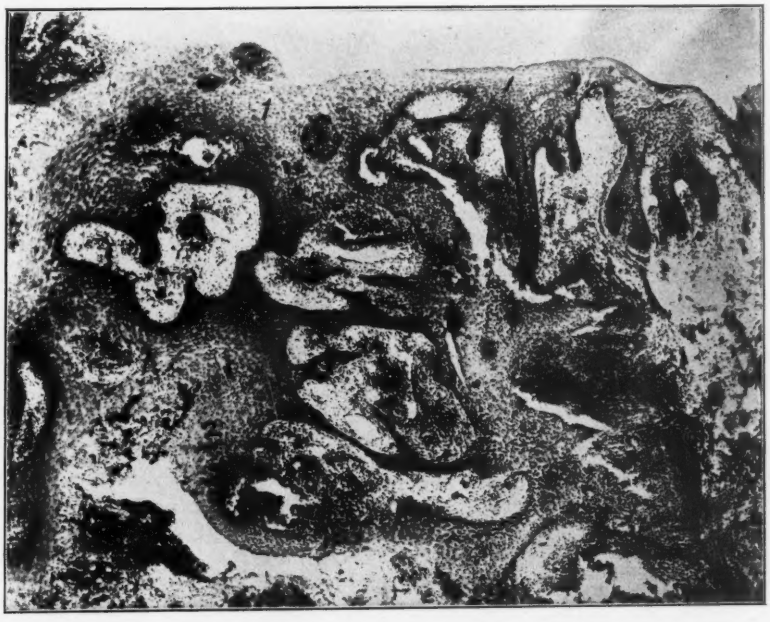


FIGURE I.—Photomicrograph (⅔ objective) showing marked (1) hyperplasia of the epithelial elements of the skin; (2) extending deeply into the corium; (3) numerous characteristic focal abscesses are seen in the epithelial layer as well as the corium.

Jour. A. M. A., Sept. 28, 1907, is of the opinion that the term Blastomycosis, which has secured a firm footing in the literature, seems not inappropriate, at least for the present. He states that the organisms should be thoroughly and exhaustively studied by botanical methods in order to obtain better understanding of the life processes.

It is believed that in certain instances the Chicago and San Joaquin parasite, though culturally and morphologically different, produced nearly identical lesions and symptoms. This is exemplified when we study the entire 19 cases of *generalized of disseminated Blastomycosis, which have been reported in the literature up to the present writing, 13 of these cases coming from Chicago and vicinity since 1902.

Clinically these cases very much resemble the California infection, and like it also are somewhat similar to tuberculosis. Ophuls is authority for the statement that in infection with Blastomycetes the primary focus is always in the skin, whereas in the so-called coccidoidal granulosum, it is just as likely to be found elsewhere. This observation loses its value when we scrutinize the post-mortem findings and especially the clinical history and symptoms of the generalized cases occurring in Chicago. We find in only one case reported by Walker and Montgomery[4], in which the primary focus existed in the skin. Disseminated Blastomycosis is practically uniformly fatal, death being caused either directly or indirectly to the disease.

So far as I can ascertain from the literature I find that only two patients have ever survived. The first one is reported by Gilchrist[5] in 1897, occurring in a negro man, which was cured by the administration of potassium iodide in six weeks. Gilchrist regards this case as one in which the disease just began to become generalized. The other case is reported by Dr. J. B. Herrick[6], of Chicago, who saw the patient in 1904. He reports her at present in perfect health with all disappearance of the disease.

The localized form of Blastomycosis, strictly spoken of as "Blastomysetic Dermatitis," may affect any region of the body, such as the scalp, breast, back, thigh, palm of hand, or sole of foot, etc. Casey Wood, of Chicago, has collected nine cases involving the skin of the eyelid. The face seems to be the most usual site, occurring in 18 out of 32 cases collected by Montgomery. The mucous membrane seems to escape almost entirely.

The mode of invasion is the subject of much speculation. In the generalized form it is conjectured that the actual portal of entry of the infecting organism is through the respiratory tract. Certainly in most of the previously reported instances of systemic Blastomycosis the lungs are regarded as the point of primary attack. In the local type, the atrium of infection is possibly through the skin, producing the lesion at the point of entrance. However, we cannot exclude the infection by way of the blood current in which the lesion is located on parts of the body, not ordinarily exposed to external infection.

The lesion begins, as a rule, with a small red papule or papulo-pustule, which, in the course of days or several weeks, has enlarged to the diameter of a dime. The course of the disease is irregular, but essentially chronic. It gradually spreads in all directions or preponderantly on one side involving a large area, and presents the appearance of a wart-like or papillomatous growth elevated to about one-fourth inch above the skin. The surface is usually covered with a dry crust, and upon its removal will reveal distinct papillary projections and depressions that give it a verrucous appearance. Not infrequently there is a seropurulent secretion, which can be demonstrated

*Since writing this paper there appears an excellent article on "Systemic Blastomycosis," in the August 15th number of the Archives of Internal Medicine, by Montgomery and Ormsby, in which they reviewed the entire literature, collecting 22 cases, several of which had never been reported.

by exerting pressure on the part. Where no crust is present, the surface is then usually bathed with this sero-purulent material. The border of the patch is well-defined by moderate infiltration, which slopes quite abruptly from the elevated roughened surface. In this dark red or purplish red border are noticed numerous very small abscesses, varying greatly in size from microscopic to those as large as a pinhead. When punctured with a fine needle, a thick, glairy muco-purulent material gives exit. This is the chosen site for a pure culture of the organism. The microscope is essential for making a positive diagnosis. The secretion can be obtained from an abscess, and when properly mounted, the characteristic organism can usually be found. In addition, cultures should always be resorted to, as the organism in most instances can be grown on the various laboratory media. If possible, tissues should be procured and their morbid histological structure ascertained. Such a tissue presents rather characteristic pathological features in both the epidermis and cutis. There is a marked hyperplasia of the rete, descending irregularly far into the corium. Epithelial perles are not uncommonly met with as a result of irregular cornification. Leucocytes invade the epithelium, which form little abscess-like areas. They are considered by most authorities as characteristic of the affection. The chief changes in the corium are the formation of small cellular collections, some of which resemble abscesses, some tubercles.

FIG. 2.—Photomicrograph. Cutaneous Section showing marked (1) Epidermal Hypertrophy, and (2) Giant cells.

In the case I am about to report, I take great pleasure in expressing my indebtedness to Dr. J. E. Shannon, of Sharon, Tenn., who so carefully obtained the history of the case, and his kindness in permitting me to report the same. Thanks are due Dr. L. E. Burch, of Nashville, who, after the operation, turned over to me the specimen for examination, without

which the report of this case could not have been possible.

REPORT OF CASE.

Patient's History.—The patient, T. J. S., white male, was born at Sharon, Tenn., 35 years ago; height, 5 feet 7 inches; weight, 150 pounds; slight attack of mumps and measles in 1884 and 1893, respectively. In 1890 had a very severe attack of dysentery for two months, recovering completely.

Louis. Has been in the drug business for seventeen years.

Family History.—On his mother's side shows history of cancer in one uncle, one great-aunt, and two third-cousins. No tuberculosis, no Bright's.

Paternal History.—Perfectly good, and long-lived.

Present Illness.—Jn January, 1905, he first noticed a small tumor about the size of a bird's

FIG. 3.—Photomicrograph. Showing (2) Miliary abscess, and (1) Giant cells not unlike those produced by the Tubercule bacillus.

From early boyhood has always suffered more or less with attacks of rheumatism; otherwise has been in good health. Always been very temperate in his habits, and has suffered little exposure. Special emphasis was laid on ascertaining his travels; it seems he has not travelled extensively, only making short trips to Nashville and Memphis. He was a few weeks at the World's Fair at Chicago and St.

egg, apparently moveable, beneath the skin, situated between the lower angle of the scapula and the left axilla. This tumor continued to grow until October, when it had attained the size of a hen's egg. A free incision was made by Dr. Shannon, turning out the contents and curetting same. The contents seemed to be a groumous, putty-like or sebaceous matter. It failed to heal, leaving a fungoid, granulating surface, with a fairly

clear cut, well-defined border. The tumor completely everting itself (turning itself wrongside out, so to speak). It continued to grow until removed by Dr. Burch, Feb. 13, 1906. Its size at removal was seven cm. wide by fifteen cm. long, involving only the skin and superficial fascia. No glands were involved in axilla, nor in other parts of body. Throughout the growth of the tumor the patient had no fever, no other symptom except rheumatic pains, which were quite annoying, but did not incapacitate him from attending to business. The patient returned home the third day after operation, contracting a very severe cold and muscular rheumatism in the leg, from which he is still somewhat lame.

The wound healed rapidly, but was followed by a keloid in the scar appearing about May 1, 1906. This has apparently gotten much smaller, until only about an inch in length remains. At the present writing, his health seems to be as good as at any time during his life.

GROSS PATHOLOGICAL REPORT.

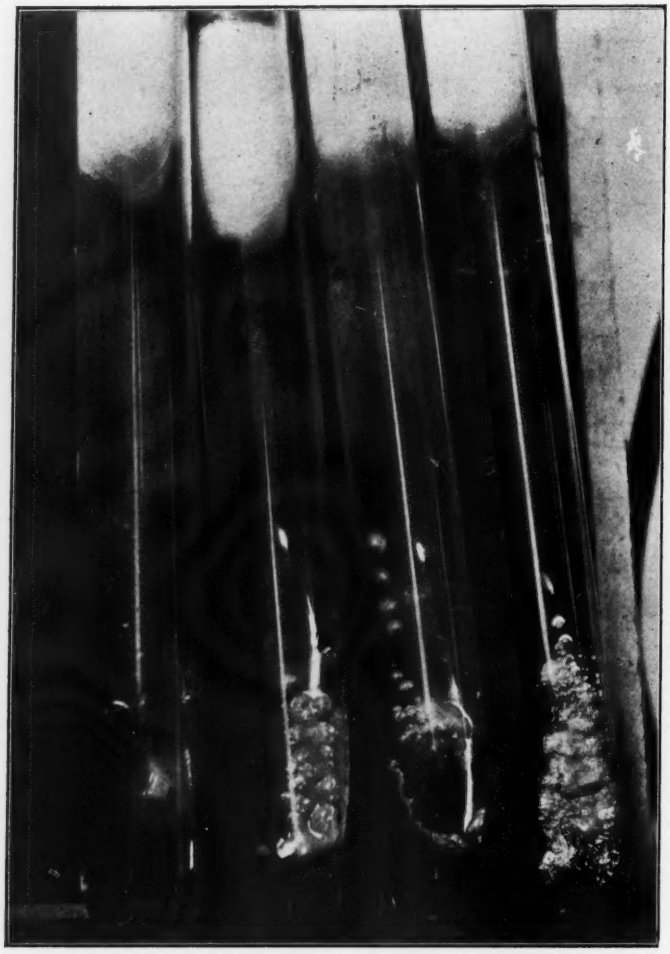
After the operation, the specimen was turned over for examination, presuming that it was possibly malignant, for it certainly very closely resembled it, and the family history and symptoms pointed that way. The specimen measured about 7 cm. wide, 15 cm. long and 2 cm. thick, presenting on its surface papilliform elevations separated by small clefts of varying depths, giving them a warty or cauliflower appearance. If compression be made there exuded a very small amount of a cream-colored material between the depressions. The borders of the patch were well-defined and studded with minute abscesses, which were detected by a hand lens. A frozen section was made, which revealed a pic-

FIG. 4. Photomicrograph. A characteristic (1) Miliary abscess surrounded by (2) Epithelial cells. Showing its contents and the parasitic Micro-organisms.

ture resembling carcinoma, but differing in a few essentials from it. I was of the opinion up to this time that the specimen was one of an epithelioma, but the peculiar features in the section aroused my suspicion that we were possibly dealing with a Blastomycetic infection, so I proceeded to examine the cream-colored exudate.

BACTERIOLOGICAL REPORT.

Under the microscope this exudate, treated with 10 per cent. K.O.H., was found to consist of broken-down pus cells, granular debris of tissue elements and a few budding yeast cells, with some bacteria, principally staphylocci. Cultures were made on glycerine and glucose agar and blood serum; also the Petri dish method of isolation was resorted to.



A. B. C. D.

FIG. 5.—(a) Culture on glucose-agar, one week old, incubator temperature. (b) On glucose-agar, four weeks old, incubator temperature. (c) On glycerine-agar, three weeks old, incubator temperature. (d) On glycerine-agar, three weeks old, room temperature.

The staphylococci, which proved to be Aureus, grew abundantly on all the media, while the yeast failed to show a growth after the fourth day.

On the fifth day, however, there appeared a very small growth of the organism on the glucose agar. It grew very slowly at first, but subsequent transplantations showed a luxurious growth on most any of the media found in the laboratory. (This is illusrated in accompanying photograph.) We not infrequently meet with organisms that are so strictly parasitic that they fail to grow on any kind of artificial media. Many will grow with difficulty at first and subsequently adapt themselves (as in our case) to their new environments by growing on practically all of the standard culture media. Smears were made from the various cultures, which showed typical yeast organisms with abundant aerial hyphæ. In old cultures there are often formed very short mycelia as well as large round bodies containing many very minute spore-like forms. (See photomicrograph.) On guinea pigs, it required very large doses of the cultures to infect them. Several of the pigs gave evidence of a general systemic infection, as evidenced by irregular fever, loss of weight, etc. Convalescence was slow, with eventual recovery. In two pigs, infection was produced at the point of injection with two cubic centimeters of the culture in normal salt solution. The wound finally healed in seven weeks. The yeast organism could at all times be easily demonstrated and cultivated from the pus that flowed from the lesion. The cultural characteristics and morphological appearances of the yeast obtained from the guinea pigs were identical to those isolated from the patient.

FIG. 6.—An old culture showing short, thick mycelia.

FIG. 7.—The yeast organisms in various stages of budding. No mycelia observed in this culture.

With a view to excluding the tubercle bacillus as a possible factor in the disease, slides were repeatedly stained with negative results. Ten guinea pigs were inoculated subcutaneously with the tissue, and also intra-peritoneally and subcutaneously with the exudate. They were examined from five to eight weeks later. No trace of tuberculous or blastomycetic infection could be found in any of these animals. One pig died three days after inoculation from a staphylococcus, which was isolated from the heart-blood and peritoneal exudate. No yeast cells could be demonstrated.

MICROSCOPIC PATHOLOGICAL REPORT.

The sections were by Zenker's fixation and celloidin imbedding and stained by hematoxylin and eosin. As above stated, some of the tissue was frozen and sections were obtained in this way. The two methods show practically the same characteristic appearances. The sections from lesions involving the skin show considerable dipping down into the corium of cords of epithelium. These papillary elevations are due to marked hyperplasia of the epithelial elements of the skin, presenting a strong resemblance to epithelioma, which has undoubtedly been mistaken for this, in the past.

The distinguishing feature from epithelioma is that in blastomycosis the basal layer is never broken, and an independent growth in the sub-cutaneous structures is never observed. The characteristic miliary abscesses were found in the hyperplastic epithelium containing leucocytes, detritus of epithelial cells, but no blastomycetic organisms were found in the large majority of the sections.

Repeated sections were made before the parasitic organism could be demonstrated in said tissues.

The focal abscesses vary greatly in size, which appear to be more thickly distributed in the rete than in the corium. The corium shows tissue composed of rather loose stroma and abundant round cells varying in size; many are polynuclear leucocytes, others are more or less epithelioid in type. Large giant cells are present, which closely resemble those caused by the tubercle bacillus. The nuclei are peripherily located. No yeast organism has been observed in the giant cells in our sections. Focal abscesses are also found in this layer.

TREATMENT.

If the lesion be small, it may be thoroughly curetted, and then large doses of potassium iodide given. As much as three hundred to four hundred grains daily should be taken. The X-ray should be used in conjunction with the iodides. Good results have been obtained by applying copper sulphate as a powder. To my mind, total ablation of the diseased area should be resorted to for the reason that dissemination may occur, which renders recovery extremely doubtful.

Hektoen and Christensen[7] have very recently instituted treatment on two of their patients with generalized blastomycosis by means of the vaccine therapy, the patients receiving injection of blastomycosis vaccine prepared from organisms cultivated from their own lesions. This procedure is based directly on the principle underlying Wright's method for treatment of infections by vaccines composed of corresponding bacteria. The patients, unfortunately, left the hospital at a time when no conclusion of value could be drawn as to the results of the vaccine.

In conclusion, my reason for reporting the case is first: To stimulate a more thorough search for the condition, which is certainly within our midst unrecognized. Second, its geographical peculiarity, being largely confined to a few localities in America, particularly in the Mississippi Valley, though isolated cases have been reported from practically every quarter of the globe. Third, to emphasize the fact that the disease is commoner than the recorded cases would seem to show, due to its resemblance to many of the less rare conditions, such as all forms of tuberculosis, epithelioma, mycocis fungoides, vegetating syphyloderm, etc. Fourth, the fact that, so far as I am able to determine in the literature, this is the first recorded case this far south in which the diagnosis has been made not only by microscopic findings, but confirmed by the isolation and cultivation of the pathogenic yeast.

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DIAGNOSIS OF SARCOMA.

BY W. A. BRYAN, A.M., M.D., NASHVILLE, TENN.

(*Continued from October Issue.*)

The fourth item as set out in the beginning of this discussion of the diagnosis of sarcoma was "to show the sites and ages at which sarcoma develops with greatest frequency." The first part of this division is embraced in the "sites of predilection" of some writers. The second item is touched on to show that certain sites are more likely to be affected in certain decades of life, or maybe better, certain tissues are affected more at certain periods of development.

Since sarcoma is of connective tissue origin, and since connective tissue is universally distributed throughout the body, the topographical scope of sarcoma may claim the whole body except the epithelial and hypoblastic coverings as its legitimate field. Histologically then one might expect rather an even distribution of sarcomata, but this supposition is controverted by the actual occurrence of these tumors, and one tissue or organ is found a frequent site, while another, that for aught we know, should show them quite as frequently, rarely manifests them except as secondary growths.

The osseous sytem gives rise to sarcomata more frequently than any other tissue. They originate either within the bone, when they are called central sarcomata, or in the periosteum, called periosteal sarcoma. Central sarcomata begin, as a rule, in the cancellous tissue in the ends of the long bones; they may, however, arise in the shaft of the bone. These are found more frequently in the long bones of the lower extremity than elsewhere. Like the inflammatory processes attacking the same parts, they are more or less spindle-shaped. They gradually cause thinning of the surrounding laminated bone as they enlarge, until fracture occurs from a cause that ordinarily should be inadequate. A simple walking gait, an effort to turn, the support of some weight may cause these fractures, much after the fashion of the slight injury required to produce hip-joint fracture in the old; and when such a fracture is found in an individual in whom there is no adequate predisposing factor, there should always be made a thorough search for evidence either of a primary sarcoma at the site of fracture, or of a secondary malignant growth at that point and for the primary growth elsewhere. It is not to be forgotten that a primary malignant tumor may be so insignificant as to give no suspicion of its presence either by physical signs or clinical symptoms, and yet produce metastases capable of doing such mischief.

These central sarcomata at times so attenuate the surrounding hull of bone as to break through it and produce a soft pulsating mass which, unless the location and history of formation are carefully considered, may mislead to the diagnosis of aneurysm. Bruit is likewise present. Central sarcomata do not show the same tendency to ossification as those originating from osteogenetic tissues at the surface of the bone. When central sarcomata originate at the ends of the bone, in the soft cancellous tissue, they do not necessarily assume the spindle shape, but depend on the lines of resistance for this feature.

Periosteal sarcomata, as stated above, are much more prone to contain new-formed bone than the central type, since they come from

bone-forming structures. They either partially or completely surround the bone when they appear on the shaft. Their presence on the surface of a bone does not, even if that surface seems unaffected, offer any evidence that the bone is not invaded, or that there is not a similar growth from direct extension into the medullary canal. Owing to the fact that periosteal sarcomata grow in direct contact with the bone surface, and that myositis ossificans has the periosteum lying between it and the bone, a differentiation may be made from skiagraphs between the two. I had hoped to illustrate this, but loss of the negatives rendered it impossible. It may be well to repeat that in myositis ossificans the periosteum lies between the new formed bone and the original bone, and in periosteal sarcoma the new formed bone lies between the periosteum and the original bone.

Of Coley's series of sarcoma cases there were thirty-seven per cent. affecting the osseous system; and of those affecting bones the order of frequency is given as follows: Femur, upper jaw, orbit, humerus, ilium, tibia, clavicle, scapula, skull, spine. Of 234 cases originally in bone included in this report by Coley, the number originating in the femur (the highest of the frequent sites) was thirty-nine, and the number originating in the skull and spine (the lowest of the frequent sites) was six. The bones enumerated in the above list included 176 of the 234 cases. So that it is evident that three-fourths of all were in these few bones, leaving one-fourth for the remainder of the skeleton. Three-fourths of

FIG. 11. Melano-sarcoma of foot. (Dr. J. M. King's case.)

these 176 cases originated in the femur, upper jaw, orbit, humerus and ilium.

Sarcoma of the femur, while, of course, it may be of the shaft, is usually situated either near the upper or lower end of the bone. It is most frequently of the periosteal type and runs habitually a rapidly fatal course. Rarely do these patients live as much as two years after origin of the tumor. Situated at the upper extremity of the bone, under the thick muscular and fatty covering, the growth may easily escape detection until it is well advanced. Hence if any of the symptoms or signs that could indicate sarcoma are found, especially if found after an injury, the most thorough investigation should be inaugurated and followed out until an accurate diagnosis is made. Situated at the lower end of the bone, the tumor may simulate disease of the knee joint, so that here also the most searching examination should be made until the physician can satisfy himself as to the lesion present.

Cysts of the bones are so rare as to be scarcely worth mention, as only a small number of reported cases appear in the literature. They are to be thought of as a remote possibility.

Sarcoma of the upper jaw, broadly, of the jaws, is used in a comprehensive sense and is made to include not only those tumors originating in the bone of the maxilla, but also all those sarcomata originating from either the mucous membrane covering these bones and the tooth structures contained in them. Usually tumors of the jaw are sarcomata. They are seen much oftener in the upper than in the lower jaw. The fact that the upper jaw is not a solid bone, but contains within its confines the antrum of Highmore, renders the difficulty of recognizing sarcomata more tedious. This alone should cause every man to have at his command some means of trans-illuminating the antrum, so as to allow no escape of an obliterated antrum from detection. Sarcomata may originate from any part of the bone; less frequently though do they arise from the anterior and inferior surfaces of the bone. A very large percentage of superior maxiliary sarcomata arise from the mucous membrane of the antrum, and consequently, when they reach the size of that cavity, their continued growth produces deformity, as may be shown by obstruction of the air passage on that side or protrusion of the eye due to invasion of the orbit. Many of these growths from the upper jaw show external deformity before there is any interference either with the nasal or orbital cavity. (See Fig. 1, in which the antrum was filled completely with tumor, and there was external deformity, but no bulging into either of the regions named.) On passing through the posterior wall of the antrum the tumor will enter the fossae of that region and gradually grow through the spheno-maxillary fissure, entering the orbit and causing protrusion.

Of the remaining osseous tissues which are usually attacked by sarcoma, little can be said that would add to the value of what has preceded on diagnosis in a general way.

Sarcoma of the fasciae are numerous. They are found more often originating "in the deep connective tissue of the neck, the thigh, the leg, the arm, the abdomen, and the scapular region" (Senn). In the sub-peritoneal tissue, even between the folds of the broad ligament, they are at times found. These sub-peritoneal sarcamota are often of large size, round, and belong to the most favorable class for good prognoses. Sutton says, "they would appear to be the least malignant of all the varieties of sarcomata, and are extremely rare." Fascial sarcomata in the region of the large vessels and nerves very often involve these and cannot be removed without sacrificing them, which means simply, that although the bone and periosteum have escaped invasion, yet the extremity suffering

must be amputated. Owing to the anatomical relation of these deep fascial sarcomata they creep along the spaces until they early reach distances from their point of origin, much further than the appearance of the tumor mass would warrant. So they become in an additional way more treacherous, and as was mentioned previously, actual pieces of the growth may be left to go on growing at doubled speed from the effects of the operation. Hence in any case of this type two facts should stand out prominently, viz.: first, that fascial sarcomata should be attacked especially early, and, second, the surrounding tissue should be sacrificed with an unsparing hand: for they return and seem only to have profited by the surgery done. The case illustrated in Figs. 5 and 6. is one of this kind in which I removed all I dared two months ago. Today the returning growth is larger than that removed, and only an amputation at the hip-joint is left to offer a meager hope to this patient.

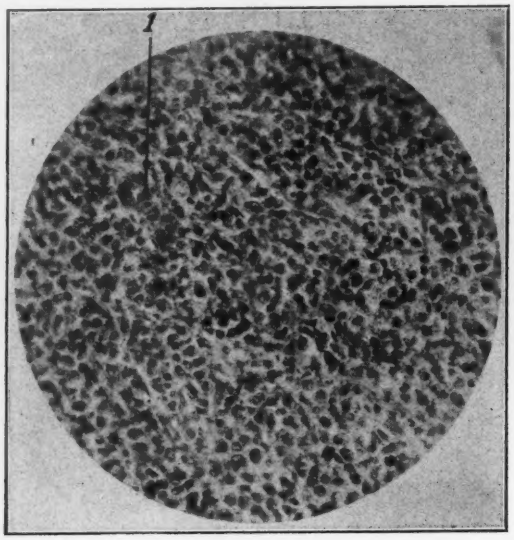

FIG. 12.—Microphotograph of small round-celled sarcoma. (1) Cell just in contact with lumen of vessel.

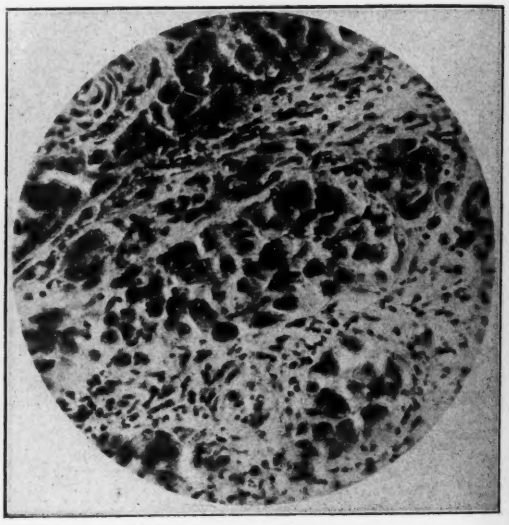

FIG. 13.—Melanotic sarcoma. Same as illustrated in FIG. 8. Notice the larger cells.

Sarcoma of the skin is usually of the melanotic type. Yet there are now and then seen cases originating in the skin that show no melanin (Fig. 2), and others that show it very indifferently as in Fig. 8), a micro-photograph of this is shown in Fig. 13. The origin of skin sarcomata seldom is seen without a distinct antecedent. This is most frequently a pigmented mole, which when trauma is added as in the form of incomplete removal, gives probably the meddler the best opportunity that can ever be offered him for the inauguration of a malignant tumor. These moles, owing to their elevation above the skin surface, are constantly exposed to trauma or to chronic irritation more than the surrounding surface: and so there is not simply a favorable soil in moles for the development of sarcoma, but an apt cultivation of that soil. So strongly has this impressed Keen that he recommends the systematic removal of moles; it is all the more needful if they are especially exposed to irritation. Moles do not offer the only predisposing cause for skin sarcoma; warts are sometimes the original condition out of which

sarcoma grows, coming from their stroma, just as with greater frequency epitheliomata originate in their tegumentary cells. So also a cicatrix may be the starting point of skin sarcoma, and even these may become somewhat melanotic as in the case of sarcoma of the foot shown in Fig. 8.

Another site for the origin of pigmented skin sarcoma is in the matrix or bed of the nails. There may be seen at times pigmented patches near the matrix prior to the appearance of the tumor. These are not necessary.

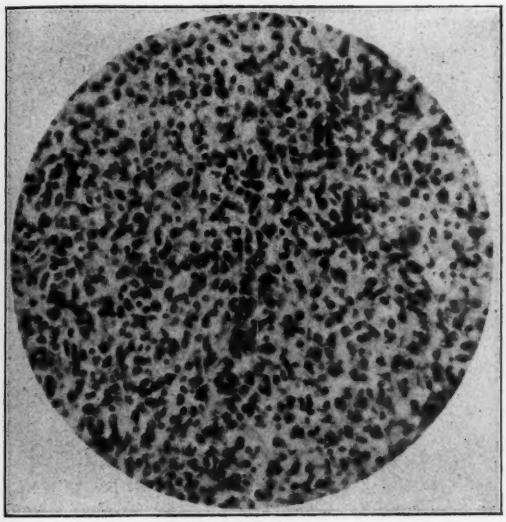

FIG. 14.—Small round-celled sarcoma.

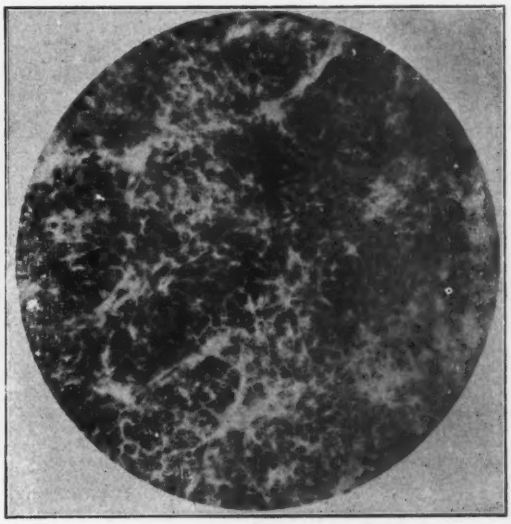

FIG. 15.—Oat-celled sarcoma.

The big toe most frequently suffers from these tumors.

In melanotic tumors the original tumor may grow indifferently, while secondary growths grow rapidly. Regional invasion is early and may be extensive. All patients who pass a dark colored urine, not caused by blood, should create suspicion of melano-sarcoma, since large quantities of melanin may be eliminated in this way.

Sarcoma of the muscles is very rare, and has been found originating in the muscles of the lower extremity more than elsewhere.

Sarcomata of the glands are more often seen in the parotid, the testicle and the mammary gland. They are to be sure found in other glandular tissues, but the preponderance in the above named organs is sufficient reason for us to limit the discussion to their appearance in these glands, as it was not the purpose of the writer to give an exhaustive discourse on distribution. It seems strange that in some of the glands there should be so few sarcomata, inasmuch as there is present in many of them a very large amount of connective tissue, and since some are so often exposed to injury or inflammation. Yet this is a fact unexplained, while on the other hand some develop them frequently.

In the mammary gland, while tumors are frequently encountered, the vast majority belong to the malignant epithelial group. Less than three per cent., according to the most recent investigations, of the total number of breast tumors are sarcoma. This is far below the relation of sarcomata to the number appearing in the whole body, since nearly one in every ten tumors is a sarcoma. Like can-

cer, and probably for the same or a similar reason, the majority of them are in women. Rodman quotes Finsterer as finding only nine authentic cases occurring in the male sex. Owing to the large number of glandular elements in the breasts and their inclusion by the growing tumor, sarcomata of this structure are frequently cystic, and their presence in the tumor substance may mislead one as to the actual sequence of events or proper classification, making the nomenclature indicate that there were adenomatous elements present, when, in fact, this presence is purely accidental. Myxomatous degeneration also occurs often and gives semblance of the presence of cysts. The recurrence of sarcomata in young women is exceedingly rapid. Function of the gland increases their growth perceptibly, and yet in any instance their growth may be incredibly fast. When growing from the mammary gland, sarcomata are rarely found to contain cartilage, or still more rarely they calcify. There is no retraction of the nipple and Halsted's sign is absent. A strange combination of sarcoma and carcinoma of the breast is seen in the breast. The glandular involvement so constant in cancer is wanting in sarcoma. The group of mammary sarcomata called periductal sarcomata shows a smooth round or oval tumor often movable, tending to become cystic, causing redness of the superjacent integument, and disposed often to rupture and become fungus.

"The parotid gland is a site of predilection for tumors rarely found elsewhere," are the words of Mongs, in his work on "Tumors of the Parotid," and Mongs writes what today is common knowledge, for tumors appearing in this are unexplainably strange. As high authority as Billroth has estimated that three-fourths of all parotid tumors are sarcomata; while this may, and doubtless does, overstate the matter, it emphasizes the striking difference between this gland and the mamma in reference to the prevailing types of tumors. These parotid sarcomata are smooth, round or ovoid tumors, and appear as a rule either just before or behind the angle of the lower jaw. They may be nodulated early or acquire this surface manifestation only after they reach considerable size. Growing rapidly, an entire involvement of the gland soon follows, and a hopeless investment of the vessels and nerves, and causing paralysis of the seventh nerve at times before the surgeon sees the case, or at any rate, necessitating destruction of this nerve at operation. Not only do intra-parotid structures suffer; the facial nerve may be attacked at its exit from the stylo-mastoid foramen, and the bones at the base of the skull invaded; the growth may extend downward beneath the sterno-mastoid and invade the sheath of the common carotid. If they take an inward direction they may be apparent on looking into the pharynx, even to such an extent that deglutition is interfered with. Chondrification or cyst formation may be present and alter the physical signs accordingly. Parotid sarcomata may involve the cervical lymph nodes or produce metastasis in the apices of the lungs. The ultimate result of these is death by starvation, fatal hemorrhage, broncho-pneumonia from pulmonary metastasis, "but dissemination is not a common feature of sarcoma of the salivary glands." (Bland-Sutton.)

Sarcoma of the testicle is claimed by certain authorities to be very rare. This it may be, yet it has fallen to my lot to see several of these tumors demonstrated by microscopic examination, and though they may be rare, they occur with enough frequency to demand capability in differentiating them from the more common infective and inflammatory lesions producing localized swellings in this organ. A still more important fact may be impressed, namely, that sarcoma may not only accompany or follow these processes, but follow apparently by virtue of their very presence. A week ago I saw a man 33 years old. He

had had gonorrhœa two years ago, which became chronic, and then he developed epididymitis on the right side. This never completely subsided, the globus minor containing a nodule until I saw him. About six or eight months ago he developed hydrocele in the right tunic, and this enlarged till it contained a pint or more of nearly clear fluid. Operation was advised for the hydrocele and the patient told that a frozen section of the nodule would be made while the operation proceeded, and that with his permission whatever necessary procedures were indicated would be done. On incising the nodule unmistakable evidence of the old inflammatory process was encountered. When the hardest part of the lump was incised it showed an encapsulated mass the size of a garden pea. This was a small round-celled sarcoma, and castration was done; in as much as the testicle at the point of inflammation was closely adhered to the scrotum, all of the right side of the scrotum was also removed. Sarcoma of the testicle grows very rapidly once it has escaped the bounds of the tunica albuginea. It also extends along the spermatic cord and thus has but a little way to go before a hopeless regional involvement has occurred. One of the most striking features of sarcoma of the testicle is the extent of the involvement of lymph-nodes. This occurs very rapidly when once enlargement starts. The lumbar glands are now and then incredibly enlarged from this cause. The other structures where sarcoma is accompanied by lymph-node involvement has been referred to already. This peculiar exception is explained by Quain as being due to the large lymph spaces occupying a position between the laminae and fasciculi of the testicle. The fact then is in keeping with what has already been set out concerning the growth of minute tumor fibrils along whatever channels may present themselves, as happens on invasion of a vein, in the eye or in bone where the tumor grows from within outward, or vice versa, through minute canals and then enlarges. The environment in the testicle is the exception, and the lymph-node involvement becomes a conformity to the habits of the tumor.

Bilateral sarcomata are seen at times, and especially in certain of the paired organs. Of these it is important to remember that where one is attacked by sarcoma and operated on the mate of the opposite side might be at the same time involved or may subsequently become involved. The organs so affected are the testicles, ovaries, eyes, kidneys, adrenals and crura cerebri. I have seen a child less than four years old suffer enucleation of both eyes for sarcoma. The operations were both within the same year.

Age.—The value of age in reference to sarcoma in general has been misunderstood and incorrectly taught perhaps in a zeal to draw clear cut clinical lines between this tumor and cancer, an attempt which a wider observation of fact not only fails to warrant, but overthrows. This has been entered into at length in a previous article. That age does bear an interesting relation to sarcoma, I hope to show by the following facts: The bilateral sarcomata above mentioned are nearly always seen in infants, or children. Bland-Sutton claims that in the kidneys, ovaries, eyeballs and crura cerebri the percentage of bilateral involvement reaches almost half of all cases.

In sarcoma of the kidney in children, there is almost no hope of a favorable outcome by any operative measures, and even if there should be an apparently good result following the operation the appearance of the disease in the other kidney is always a menace, as happened in Abbe's case, in which a sarcomatous kidney was removed from a child 14 months old. Four and a half years later he had charge of the patient and found a sarcoma in the remaining kidney. Bland-Sutton collected a series of 21 cases of this condition operated. Twelve died from the operation, the remaining nine died later of recurrence. It is probable that no other surgical

lesion offers less hope with or without operation than sarcoma of the kidney in the young.

Like the kidneys and other paired organs, the ovaries are more prone to develop sarcoma in youth than at any other age. After this there is a period of years, from 15 to 20, in which it is less frequent, and after 20 years of age the frequency increases, but not to the percentage of early years. The same rapidly fatal outcome, the same operative mortality, the same enormous recurrence after operation, the same tendency to bilateral attack is present in young patients as was found in sarcoma of the kidneys. After the period of infrequency, that is after the age of 20 years, sarcomata of the ovary is occasionally seen, and is likely to affect only one organ. After the thirtieth year there seems to be a second period of infrequent affection until after menopause, when the frequency increases. So that whatever it may mean from an etiological view, there is a highest affection of the ovary by sarcoma from infancy (it may even occur in the fœtus) to puberty or a little later, a diminution from this time to twenty years; from twenty to thirty an increase, from thirty to forty-five (menopause) a second reduction, and after forty-five another increase. Strangely enough there is a similar fluctuation in the appearance of sarcoma of the testicle. Here there is a period of frequency in boys, a reduction in young and middle-aged men and renewed frequency in old men. The eyeballs show as stated above the tendency to be both affected by sarcoma. The second eye may manifest the trouble early after invasion of the first, or sometime afterward. Ocular sarcoma is peculiar in that it usually produces death by metastasis, and that these metastases usually do not affect the brain, and when this structure is involved the extension does not, except in rare instances, reach it by extension along the optic nerve. The metastasis from eye sarcomata occur most often in the liver. There is a smaller percentage of recurrence in these than in the other paired organs mentioned, and a longer expectancy during the progress of the growth.

The ages of greatest frequency of sarcomata in voluntary muscles is from eighteen to sixty years; in sarcoma of the synovial membranes from twenty to thirty-five years. Sarcoma of the intestine is more usual in early life, and is often seen in children. It has the strange faculty of selecting most frequently those parts of the alimentary tract least often attacked by carcinoma. Julius Strasburger, in 1894, reviewed the literature and found that it occurred with greatest frequency during the fourth decade of life. Relative to carcinoma of the alimentary, they are exceedingly rare. The age range of sarcoma of the breast is wide, and Rodman gives 45.6 years as the average. In the parotid gland it is seen most frequently from 30 to 40 years of age; but chondrifying sarcoma of this gland is more prevalent from 15 to 35 years.

The last item of this discussion was "to show the type of sarcoma that is most likely to affect certain organs, for the value it may have upon prognosis and treatment."

As has been stated in passing in the foregoing pages of this discussion there are certain organs which, when affected by sarcoma, offer a hopeless or nearly hopeless prognosis to surgical treatment. Notably among these may be recalled sarcomata occurring in paired organs in the young, and of these the kidney heads the list of those that can be reached by surgery. Coley has in a recent paper, shown clearly that sarcoma, especially periosteal, of the upper end of the humerus and femur, belong to the almost hopeless class so far as surgery alone goes, and that the toxins of erysipelas and prodigiosus should be tried first.

The distribution of the various types of sarcoma (round-celled, spindle-celled, giant-celled) is wide and their intermixture is very often seen. The small round-celled sarcoma, other things being equal, offers the worst prognosis of these three. Duplay and Cazin remark that "in a general way it is possible to state

that the smallness of the cellular elements is a certain index of an active multiplication of these elements, implying rapid growth of the neoplasm, which they make up, and consequently a very marked malignancy."

Giant-celled sarcomata are not found pure, always showing either round or spindle-cells associated. It is found most often in the lower jaw, the tibia, and femur. In accordance with the preceding statement of Duplay and Cazin it grows slowly and does not tend to ossify or undergo degenerative changes.

The round-celled sarcoma is distributed anatomically throughout the body tissues, and in age to all the years of life from the youngest to the oldest. Lympho-sarcomata belong to this division, but the cells are enmeshed in a delicate network of reticulum, that causes them to be specialized by the name lympho-sarcoma. They are rare, extremely malignant and prone to occur in the tonsil, the testicle, the superior mediastinum, the subperitoneal and subpleural connective tissue, and in the base of the tongue.

Like the round-celled sarcoma the spindle-celled has a wide distribution. Less malignant than the former, its malignancy is variable in accordance with the appearance of stroma, which it, or the variety known as oat-celled sarcoma, shows at times. This is in keeping with a general conclusion relative to malignant growths. The more there is of stroma, relatively the less there must be of cells. So in sarcomata having stroma it is true that the malignancy is diminished, or better the expectancy increased, just as it is seen in withering scirrhus of the mammary gland.

Angio-sarcoma is another rare one. Like angioma it is found usually about the head, 46 out of 60 cases (Senn) grows slowly, does not metastasize except in a small percentage of cases, and recurs rapidly.

Melanatic sarcoma (see Figs. 11 and 13) is found with considerable frequency and largely confines its primary appearance to those tissues normally having pigment. Therefore it is to be found in the skin and the charoid more than elsewhere. Its appearance elsewhere, however, has been demonstrated. Senn makes the statement that it is sometimes seen in the testicle and Tuffier reported in 1888 a case of melano-sarcoma of the rectum. He refers to one reported by Billroth and another by Eiselt. His concluding words are: "Primary melanotic tumors of the rectum are sarcoma. These tumors are, in general, pedunculated, reminding us of fibrous polyps. Their rapid course, recurrence following ablation, their multiplicity, and especially the presence of invaded inguinal lymphnodes, which become large and hard will allow them to be recognized."

Melano-sarcomata are the most malignant of all. They are early disseminated both near and far, and have a special field presented in pigmented moles and warts. They may abound in pigment, or it may be only slightly in evidence (see Fig. 13). The pigment of these tumors show less in the younger cells constituting the growing parts of the tumor, even when it is abundant in the older cells. Bland-Sutton says that in some cases (rare) the tumor seems to become a source of pigment which is eliminated in the urine.

INTESTINAL AUTO-INTOXICATION.*

BY ARCH DIXON, M.D., HENDERSON, KY.

To Bouchard, perhaps, more than to another, belongs priority in the investigation of results produced by absorption of substances from normal or abnormal cavities of the body developed from putrefaction or fermentation. Putrefactive processes in the intestinal canal and the development of physiological and pathological alkaloids play an important part in many diseases—processes until lately unknown or misunderstood. Death frequently carries off in a few hours or days persons who are in the prime of life, and in apparent good health, and at the autopsy the most careful examination fails to reveal alterations of structure, such as can explain the fatal stroke. Epidemics, not of a specific character, but traceable to poisons in food or water, have unexpectedly appeared in certain neighborhoods; scarcely a day passes that we do not find in the public press accounts of violent and sudden illness and death due to ingestion of impure foods, both solid and liquid. Doubtless many of you here present can recall how the members of a marriage party, some years ago in the city of Louisville, were made desperately ill, two or three of the party dying, from eating chicken wherein putrefactive germs had been implanted. Fish and oysters, not quite fresh, are especially noted as carriers of these microbes of putrefaction and fermentation, the products of which cause illness and death. These are the cases that have aroused public opinion and awakened professional interest in a subject toward the elucidation of which the pathological chemist has vied with the bacteriologist.

(1) Bouchard in his lectures on "Auto-Intoxication," clearly indicates that man is constantly standing, as it were, on the brink of a precipice; he is continually on the threshold of disease. Every moment of his life he runs the risk of being overpowered by poisons generated in his own system. Self-poisoning is only prevented by the activity of such excretory organs as the kidneys, skin and lungs, and by the watchfulness of the liver, which acts the part of a sentinel to the materials brought to it by the portal vein from the alimentary canal.

(2) Lauder Brunton devotes considerable space to the discussion of this important subject in his "Introduction to Modern Therapeutics." He calls attention to the fact that chemical investigation has shown how disease depends upon the products of putrefaction and fermentation, rather than upon the direct action of microbes upon the tissues. It is this fact which renders knowledge of the life history of bacteria so valuable, for long after microbes have been destroyed, the enzymes, or ferments, which they formed, continue to act, and are not destroyed by a temperature which is destructive to the organisms themselves. It has been demonstrated beyond question that true intoxication may result from eating tainted meat. Gaspard and Panum have shown that the putrefaction of meat develops a poison capable of inducing accidents, both serious and fatal. There is a marked difference, however, in the development of symptoms from the ingestion of meat, fish, etc., in which the processes of decomposition have progressed to such an extent that the *products* of putrefactive microbes are present and the ingestion of meat, etc., which is only beginning to putrefy, in which microbes are at work inducing fermentation, but in which the products of these microbes have not as yet been formed.

In the first case the symptoms are devel-

*Read before the Union County, (Ky.) Medical Society, October, 1908.

oped rapidly, usually beginning in a half hour after eating tainted meat. In the other case there is a period of incubation in which the symptoms are slowly developed, lasting from eight to eighteen hours after the ingestion of suspected foods. In this period of incubation no warning of the explosion which is preparing is given; but once the poison is formed, toxic accidents are quickly developed, and we have the symptom complex of ptomaine poisoning.

Intestinal auto-intoxication, as we now understand it, may be succinctly summarized as follows:

"During digestion, a number of poisons or entero-toxins are manufactured as a result of putrefaction of albuminoid food in the intestines. These entero-toxins attain the liver by the way of the enterohepatlic circulation, where they are made inocuous. From the liver they pass into the general circulation and are excreted in the urine. If albuminoid putrefaction is excessive, or, if the liver or kidneys prove inadequate in either neutralizing or excreting the poisons, intoxication of the organism ensues."

(3) The body tolerates many substances in relatively small quantities without the production of harm, but the same substances in large amounts will produce such a perversion or inhibition of normal metabolism as to constitute an injury. Under such circumstances these pass from the class of inocuous to distinctly harmful or toxic substances. Even the very things the body looks to for its maintenance and support, as salt, sugar, water, may in excessive amounts become harmful."

(4) There is a condition of altered or vitiated metabolism; poisons are generated by fermentation and putrefaction in the intestinal canal; there is a lowered condition of vitality and the organs of defense and elimination are no longer able to overcome, or resist the attack. One of the first results is stagnation of the portal circulation, which so hampers and cripples the liver that it is no longer capable of filtering these poisons or of converting them into non-toxic and assimilable substances; the kidneys for the time being perhaps eliminate an excess of water, but the urine is of lower specific gravity, contains less solids and is less toxic; in other words, the quantity of toxic material introduced into the blood exceeds the amount eliminated by the kidneys. With free action of the kidneys things may not go further; but if the renal elimination is insufficient, we may see developed a fraction of uraemic intoxication through the simple exaggeration of intestinal fermentation. If, on the other hand, excessive vomiting has caused oliguria, we may have coldness of the extremities, paralysis of the vessels of the skin, cramps, convulsions, coma, paralysis, even death, while the kidney may not be really diseased. It is an established fact that an intoxication may result from excessive formation of putrid substances in the intestinal canal even without the kidney being diseased.

The advanced studies in metabolism have modified, if not changed, the opinion commonly held in regard to the etiology of uremia, a disease or condition which undoubtedly deserves to be classed among the auto-intoxications. It no longer suffices to say, with Wilson, that uremia is due to an excess of urea in the blood; nor with Traube, that the conditions present are brought about by cerebral oedema; nor indeed can we agree with Frerichs, that the system is poisoned by an excess of ammonia in the blood, or accept the theory of extractive matters as advanced by Schottin and Bence-Jones.

Latest authorities seem now inclined to accept the conclusion reached by Bouchard, that "Uremia is a complex poison to which in unequal proportions, all the poisons introduced normally into the organism or formed therein physiologically contribute, when the quantity of poison formed or introduced in twenty-

four hours can no longer be eliminated in the same time by the kidneys, which have become insufficiently permeable.

He does not agree with the opinion that has only regarded as toxic agents the substances which originate from disassimilation, but insists that it is necessary to add to them the poisons furnished by the biliary secretion, alimentation, and intestinal putrefaction. The acceptance of these views has brought about a change in the treatment of uremia. It is no longer thought necessary to rely upon purgation to produce watery stools, nor to employ remedies to increase elimination by the skin and lungs, but, as the poison is contained in the blood, it is considered more efficacious to practice venesection and to remove a certain quantity of blood, in cases of acute curable nephritis (scarlatinal) and in eclampsia, thereby lessening the gravity of the intoxication.* Enemas of cold water, thrown high into the colon, are made use of to increase the general arterial tension and relieve the stagnation of the portal system, thereby increasing the general circulation and stimulating renal activity. The use of diuretics, especially milk, intestinal antisepsis and inhalation of oxygen and of chloroform in convulsive symptoms, all of which was very ably set forth by Dr. D. O. Hancock, in a paper on "Uremia," read before the Henderson County Medical Society a short time ago. Puerperal eclampsia, a disease so nearly resembling uremia, that it is commonly looked upon as such, is unquestionably to be classed among the auto-intoxications. It may be well to call attention to the fact that auto-infection should not be confounded with auto-intoxication, as these two processes are wholly distinct.

(5) The term auto-infection is properly applied to those cases in which the virus of disease is carried locally in some part of the body, and is distributed from this locality to other parts of the body. Illustrations of auto-infection are numerous in certain diseases, and especially in tuberculosis. An individual with pulmonary tuberculosis swallows his sputum and infects his intestinal walls. Another person may carry for years a colony of tubercle bacilli in his lungs, in his bones, or in some other part of his anatomy, and then when this individual is exposed to conditions which materially lower his vitality, the bacilli which have been confined to a narrow locality, pass beyond the bounds to which they have so far been restricted, and invade every tissue, leading to miliary tuberculosis.

Post-mortem examinations have shown that one-third or more of all men have latent tuberculosis, and this undoubtedly is the explanation of the frequently observed fact that injury to some part of the body leads to tubercular lesion in that locality. In this way we may account for tuberculosis of the hip joint, of the spine, and of the meninges of the brain."

Among the well defined auto-intoxications may be mentioned that profound acidosis which is the cause of diabetic coma and less frequently of other active manifestations, notably persistent acid vomiting.

The cause for this marked production of organic acids is not known with certainty, but has been attributed to the abnormal destruction of proteids. At any event, when acid production reaches an active point it constitutes a profound toxic condition calling for heroic treatment. One should not neglect to consider the possibility of its presence, not only in the graver manifestations of diabetes mellitus, but also in any case of persistent acid vomiting, either of children or in adults, and in pregnancy."

(6) Our knowledge of the normal bacterial flora of the gastro-intestinal tract is at the best fragmentary, while what we know of the

*A bleeding of 32 grams removes from the economy more extractives than 280 grams of liquid diarrhea does, or as 100 litres of perspiration.

bacterial flora in the diseased conditions under discussion is even more incomplete.

It may be the part played by the stomach is due to the variation of its secretive and motor activity rather than to the bacteria that may normally or in disease inhabit this organ. All of the many influences that tend to produce hyper, or hypo-activity, or secretion, or to cause diminution of the motor function, combine to establish a new environment in the intestinal tract, and so are important factors in the struggle for supremacy that is constantly going on between the normal bacterial inhabitants on the one hand and undesirable bacteria on the other.

(7) Bouchard attributes many of these symptoms to abnormal fermentations in a stomach which in consequence of congenital or hereditary weakness of its muscular walls contracts insufficiently in the intervals between different periods of digestion. He believes that, from this cause soluble toxins are produced which when reabsorbed impair in varying degree the several tissues of the body. This theory would attribute the vitiation of nutrition primarily to dilatation of the stomach, but though some cases may be so explained it is certain that in the majority the dilated stomach is a secondary and not a primary event.

All of us perhaps, in a more or less cursory way, have had our attention called to the subject of auto-intoxication, but I fear none of us has given to the subject the thought and study that its importance demands. I, for one, plead guilty to the charge and I am also willing to admit that when at a loss for a diagnosis I have made use of the terms faulty metabolism, auto-intoxication, just as we all have in diagnostic stress seized upon malaria and uric acid to tide us over a dilemma.

Never was my mind called to the far-reaching importance of auto-intoxication as it was during the past summer, while in the East on my vacation. A party of medical men, myself included, visited some of the larger hospitals to see the work of the leaders in surgery; we also called upon a neurologist whose reputation is second to none in this country, at his sanitorium in which a patient of one of our number was being treated. It was here that the statement was made that a very large proportion of cases of neurasthenia had their origin in gastric and intestinal disturbances, most of them being due to auto-intoxication by absorption of the products of fermentation and putrefaction in the intestinal canal, and that furthermore a very considerable number of cases of insanity originated from the same cause. We were taken through this institution and were shown case after case and the remarks made upon them was one of the most interesting and instructive clinical lectures it has been my good fortune to hear.

The doctor said that the etiology of the disease was as yet not thoroughly understood, and that it was impossible to refer to any one cause as being the sole factor, but that he was strongly inclined to believe that errors of digestion were primarily the root of the evil; these errors of digestion by neglect soon grew to be a source of exceeding discomfort and were accountable for a toxic condition induced by fermentative and putrefactive changes in the intestinal canal, and as a consequence, there was faulty metabolism, interfering with the action of the trophic nerves throughout the body, manifesting a special preference for the splanchnic area.

Vasomotor disturbances followed, and there was congestion of the portal system and of the liver; lowered arterial tension, etc. The symptom complex in these cases vary in degree, depending largely upon temperament, occupation, environment, heredity, etc. Particularly were those unfortunates who came into the world the victims, through no fault of their own, but of their forbears, upon whom are visited the sins of omission and commission of ancestors who worshipped too freely at the

shrine of Bacchus and of Venus, prone to complete nervous breakdowns.

Gentlemen, all of us see these cases; they are the *bete noir* of the medical profession. Men and women are its victims, perhaps more often men than women. You rarely find it in men who lead an active outdoor life, and in those who earn their daily bread by physical labor. It is more often present in those whose lives are passed in sustained mental effort—in business men, bankers, lawyers, in those whom dire necessity compels to stand behind desks or counters from early morning until late at night, breathing the vitiated air where crowds do congregate. In men and women who only have the usual "twenty minutes for dinner," and who bolt their food and chew it afterwards. In those who have nothing to do, whose lives are spent in luxurious idleness and discontented ease, who perhaps have inherited a neuropathic tendency. These unfortunates come to us and pour out their complaints, sometimes with a volubility that is astounding. They tell you that they have bad digestion, a sense of weariness; no energy; no interest in life; that they are restless and irritable; have headaches and do not sleep well. They have neuralgic pains, their muscles tremble and their feet go to sleep; they have hot flushes; ringing in their ears; they do not remember well, have vertigo, palpitation of the heart, intermittent pulse and bad liver, with, perhaps, a floating kidney, etc. These patients have their symptoms at their tongue's end, and before they are half through telling them you wish that she had seen the other fellow. They have gone in and out pouring their tale of woe into the unwilling ear of every doctor that is accessible. One has advised a pepsin, another a pill, and a third a course of diet, with the assertion that she will soon be better. For a few days there is usually a feeling of improvement, but this improvement is not because of the pepsin or due to the pill, but suggestion has been implanted and the moral effect is the source of the fancied benefit. Eventually they fall into the hands of quacks or become the victims of Christian Science fakirs. In the language of my friend, Dr. Hancock, "advanced thought sends a message of hope to these unfortunates."

In the treatment of acute indigestion, from any cause, nature gives us a straight tip—vomiting and purging are plain signs that the economy is trying to rid itself of noxious material in the intestinal canal which is, by its presence, interfering with normal metabolism. The stomach should be washed out with sterilized water as hot as can be borne, and which should be repeated until the water returns clean and clear. I was about to say, the colon should be douched with normal salt solution, but I have been recently so thoroughly convinced that so-called colonic douches or high enemas are a delusion and a snare that I no longer order them employed. The reason is simple; it is this: owing to the anatomical folds of the gut in the upper portion of the rectum and in the sigmoid flexure, it is almost a matter of impossibility to pass an ordinary colon tube high enough to flush the colon, nor indeed, can the colon be filled with a Wales bougie in the position usually advised—I venture to say that not one trained nurse in fifty can do this. The colon tube is introduced and carefully inserted perhaps for its full length, but does not go through the flexure; it simply turns upon itself and fills the rectum with tube leaving the colon guiltless of water. So, instead of a high enema, order an ounce or two of castor oil. This to be followed by an intestinal antiseptic, arsenite of copper, guaiacol carbonate, dermatol, if you like, and a hypodermic of morphia 1-4, and atropia 1-150, to induce quiet and sleep. In addition to these a rigid abstinence from solid food for a few days usually completes the cure. The treatment of ptomaine poisoning is the same, with the addition of such other

means as may be necessary to restore the equilibrium in the circulatory and nervous system. The neurasthenic cases, such as I have spoken of, require such varied and special treatment that I shall not attempt to give more than an outline of it. First of all, these cases need rest, both mental and physical, and the fact that this rest, no matter however applied, cannot be successfully given without removing the patient from the influence and associations of home surroundings should never be forgotten. No hard and fast rules can be laid down in all cases; not all of them require the rigorous and confining rest cure as prescribed by Weir Mitchell. Many neurasthenics are, if not permanently cured, at least greatly benefited by a sea voyage—if, fortunately, the expense can be borne—and I speak from a personal experience on this point; a trip abroad, not on one of those nerve-racking race-horses of the sea, but on a slow steamer, where one can enjoy the invigorating and tonic air of the ocean; the change of environment, and the thousand and one incidents of travel all have a tendency to take your patient away from himself. The change of scene is so quick and so varied that a new train of thought comes with such frequency that he has no time to think of his ailments and shortly has forgotten them.

The Weir Mitchell treatment is eminently fit, and in fact demanded, for that class of patients in whom nervous symptoms predominate and which are already or fast becoming hysterical. Those poor unfortunates are nervous wrecks, who no longer are interested in the affairs of life; who have lost appetite, weight and strength; who have reached a point when life is a burden, not only to themselves, but to their families as well. In many cases where the symptom complex has not reached this exaggerated standard, a less strenuous treatment may be given in some quiet place removed from the kindly meant but hurtful sympathies of family and friends. The efficacy of any treatment must depend largely upon the physician and almost as much upon the nurse. The treatment by suggestion when intelligently employed by the physician, who, by his cheerful manner and by his firm though pleasant application of therapeutic measures has won the confidence of his patient, is capable of marvelous effects in relieving the patient of morbid ideas and fancied ills.

The influence of the mind over the body was long ago demonstrated by Tuke and others, and in no way has this influence been shown than by healthy suggestions made by the physician. There is no better proof of this than the almost daily introduction of some new fad or delusion in the treatment of disease. Auto-suggestion is also powerful for good or ill. Abrams says, "Christian Science is suggestion plus absurdity; divine healing, suggestion plus faith in God; Dowieism, suggestion plus prayer and holy terror; Weltmerism, suggestion plus imagination, pure; magnetic healing, suggestion plus imagination, also; osteopathy, suggestion plus massage; homeopathy, suggestion plus nothing; alopathy, suggestion plus tubfuls of drugs that either kill or cure; regular or rational medicine, suggestion plus the best common horse sense available, or suggestion and medicine mixed with the best quality of brains obtainable."

(8) Suggestion is the scientific principle at the bottom and it may be used with telling effect in all cases of sickness, and is infinitely better than the delusions of the day in so much as it substitutes intelligence for ignorance and does not produce that disaggregation of personal consciousness and temporary insanity that is the *sine qua non* in Christian Science, etc. We are all prone to forget that we are dealing with human beings whose hopes and fears are played upon by our every word and act, as subtly as the most wonderful musical instrument is touched by the fingers

of the master performer. We may thus be the creators of the sweetest strains of human feeling, or the insensible performers upon "sweet bells jangled out of tune."

(9) A few words in regard to the use of drugs in these cases, and I am done. While it may be true that drugs occupy a place of secondary importance, we cannot afford to ignore them in the treatment of any disease. Those members of the profession who have become nihilists and are given to sneer at the "old fashioned" doctor, who still has faith in and uses his calomel, opium, quinine, etc., are setting aside the most powerful weapons with which we are provided to conquer disease. It is becoming fashionable to speak disparagingly of the value of drugs and to look upon their disregard as an evidence of superiority in skillful treatment. Certainly it will be difficult to convince sick people, especially neurasthenics, that they can be restored to health without the use of medicine.

The excessive and indiscriminate use of drugs, is, of course, to be condemned, but their moderate and scientific use, always with an eye to their physiological action and therapeutic effect, is equally to be praised. I consider nihilism in medicine to be a species of affectation, if I may be pardoned the expression, which should not be encouraged. "There is much in the training of the experienced practitioner which inspires him with therapeutic hope, in a vast number of the ills of the flesh. By drugs, he can produce anesthesia, local or general, relieve pain, produce sleep, stimulate or depress the circulation, allay nervous irritability, aid digestion, relieve constipation and hepatic torpor, produce emesis, diaphoresis and diuresis, antidote malaria and cure syphilis. What wonder he has confidence in drugs *per se,* whilst rather skeptical of our knowledge of them? And so long as there are sick ones to heal so long will he search for remedies—and so long will he read and believe in the literature that offers therapeutic hope."

(10) From the view point of etiology, and if it be true that these toxaemias, manifested by symptoms protean in variety, have for their base the absorption of poisons generated in the intestinal canal which induce fermentative and putrefactive changes, the logical conclusion is to use all the means we possess to aid and assist the normal bacterial inhabitants of the intestinal canal which are the bacteria of defence, to resist and overcome the attack made by the army of bacteria from without. Digestive disturbances first of all should be looked after. Anything interfering with the digestive apparatus will favor intestinal putrefaction and any condition favoring the latter conduces to auto-intoxication. Diet, therefore, is an important factor in the treatment. An exclusively milk diet which reduces to a minimum the introduction of poisonous food products, at first should be given. Milk diet is a preparatory regimen, soon to be followed by clear soup, fish, fowl and game. Massage, especially abdominal massage, and electricity are helpful. Intestinal antisepsis I consider one of our most powerful weapons. For years and years the profession has been using —without knowing it—that best of all intestinal antiseptics, calomel, in almost all diseases which affect the stomach, intestines or liver; carbolic acid, the sulpho-carbolates; arsenite of copper; dermatol, are among those I have found beneficial in almost all of the toxæmias, eminently so in those of intestinal etiology.

The relief of insomnia, which is nearly always present, I regard as one of the most important steps in the treatment, and trional or sulphonal in a single dose of ten or fifteen grains, given in a wineglass of hot water at bedtime, will usually induce quiet sleep, especially if the patient is told that the medicine will produce sleep and the benefit of the suggestion is added to the power of the hypnotic.

Should these fail, ten grains of veronal will accomplish the purpose in a majority of cases. It may be even necessary to resort to a hypodermic of morphia 1-4, and atropia 1-150,

given at bedtime for two or three alternate nights, always bearing in mind the proneness of these patients to acquire the morphine habit. The risk is justified by the great benefit received. In many of these cases a loose kidney adds largely to the discomfort and requires to be looked after. The presence of indican in the urine is almost pathognomonic of intestinal putrefaction, though this condition may exist in the absence of indican.

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THE COMPLETE OPERATION FOR SUPPURATIVE APPENDICITIS. *

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I beg leave to submit a short series of cases that will give interpretation of the title more fluently than words can describe. As we are today well aware of the fact that the question is an open one whether to do much or little in case there is rupture of the appendix and abscess formation about the head of the colon, I have not made special search of the literature upon this subject because the reading which I have done serves to indicate that the opinions of those who express themselves in print are not positive nor definitely formed. The majority of writers seem to be searching for a compromise. Two unpleasant experiences of mine constrained me to a closer examination of this subject. One was in a boy eleven years old, who had been sick four weeks. Operation —simple incision and wick drain. The next morning he began expectorating foul pus—pulse and temperature indicating grave danger. The incision also drained freely. Several months elapsed before this boy could be out of bed, during which time he became addicted to morphine, of which he was finally cured with great difficulty.

A second patient, a boy seventeen years old, who had been sick a week, occurred almost simultaneously with the above case. Operation, simple incision and drainage with cigarette wick. Wound healed to a small sinus in two weeks, at the end of which time there occurred violent pain with swelling upon left side of the abdomen. Pulse, 120; temperature, 103. Abdomen was opened in the median line and pus estimated at one quart was evacuated. The cavity of this abscess seemed to have no connection with the original focus. Fecal fistula developed and the young man was in bed four months and confined to the house six months.

Case No. 3 was a boy twelve years old; had been sick one week when seen. Abscess opened and drained. In two weeks there appeared a chill, high fever and rapid pulse. Pain in the vault of the abdomen; large quantities of offensive pus were expectorated. Recovery in twelve weeks.

The plan which I have followed in ten cases without a death is as follows: Long vertical incision. This is important; the incision must be ample to afford free visual inspection. The infective area surrounded with gauze, being careful to place a large pad in the pelvis; one under the liver and one in the fossa occupied by the right kidney. The abscess may now be freely opened and the pus mopped out with large gauze pads as rapidly as it appears. The cavity can now be thoroughly cleansed; all pockets explored; connecting sinuses dilated and complete toilet of the peritoneal cavity performed. The appendix, if still attached to the cecum, is to be ligated at its base and excised. The soiled gauze pads are replaced by fresh ones; all pus and debris mopped out; a cigarette drain inserted in the abscess cavity; all the gauze packing removed; provisional silkworm gut sutures introduced, but not tied; copious dressing applied and the patient placed in bed in the Fowler position.

The after-treatment consists in daily dressing with a sterile gauze next to the wound and oakum exteriorly to absorb the enormous secretion that follows. When granulations have become established and the wound begins to look healthy the sutures may be tied and the margins thus approximated. The

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sutures should be tied one at a time each day. Pain and tension are produced by tying them all at one time. In this series of ten cases I have had but one case of ventral hernia, and that was one of my early cases in which I allowed the protecting gauze pack to remain in the cavity more than a week after the operation. The rupture was cured by a subsequent operation performed by myself.

Following is a brief report of my cases:

Case No. 1.—Referred by Dr. Carter, of Monticello, Ky. Patient had been sick a week; transported twenty-eight miles over rough mountain roads in a jolt wagon, thence to Louisville in a baggage-car—the journey on the train occupying about twelve hours. The abdomen was opened and treated as described. Patient made a slow, but even progress to recovery, and is now actively engaged in drilling oil wells.

Case No. 2.—Girl; aged 12. Referred by Dr. J. F. Taylor. Had been sick one week; high temperature; fast pulse; distended belly. Operation as described. Recovery complete in four weeks. This is the case in which hernia occurred.

Case No. 3.—Referred by Dr. Barbour. Girl; aged 8. Had been sick three days. Peritonitis well developed; appendix, as in the two cases already alluded to, perforated by slough and gangrenous. Operation as described. Recovery in three weeks.

Case No. 4.—Referred by Dr. Melton. Girl; aged 17. Had been sick one week. Peritonitis developed. Appendix gangrenous. Operation as described. Recovery in three weeks.

Case No. 5.—Very much like Case No. 4. Operated similarly. Recovery in three weeks.

Case No. 6.—Case referred by Dr. Purkhiser, Salem, Ind. Young man, aged 19. Had been sick forty-eight hours. Operated on at his home. Appendix sloughing and gangrenous. Operation as described. Left after operation in care of Dr. Purkhiser. Prompt recovery.

Case No. 7.—Colored girl; aged 21. Appendix gangrenous and incorporated in large tubo ovarian abscess. Patient now convalescent.

Notes of my other three cases have unfortunately been lost. One which I report from memory occurred in a boy 8 years, similar to those above noted. This case is of interest to me because I learned from it the lesson of allowing my drain to remain in place until it will almost fall out by its own weight. This case did well after operation until on the fourth day I removed the cigarette drain. It was with some force I succeeded in its removal. The same evening symptoms became alarming and extensive peritonitis developed. The child recovered after we had despaired of his life. His convalescence was fitful, slow and tedious. Since then I have left my drains in position as long as two weeks and never remove them under one week.

It is emphasized here that the excision of the appendix shall be accomplished in the simplest manner possible. Ligation with silk and division distal to the ligation. No attempt is made to bury the stump. Advantages claimed for the method are (a) the thorough manner in which the pathology of the cavity is attacked; (b) perfect drainage; (c) no liability of subsequent attacks or formation of remote abscess, subphrenic, perirenal or otherwise.

The eight (8) cases here detailed certainly show by their prompt recoveries the safety of the plan.

INTERNAL SECRETIONS.

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All tissues of the body produce certain chemical changes as a result of their protoplasmic activity, but in certain cells or aggregations of cells, chemical elaborations have come to be their chief function, the cells having become differentiated in that direction, and the term secreting tissue or gland tissue is applied. The end result of the metabolism in gland tissue is the giving off, or extrusion on the free borders of the cells the products of their activity. These products are known as secretions, and the process itself the act of secretion. Certain secretions are in the nature of waste products of the body, and are not further necessary in the economy of the structure, but are discharged from the body by some avenue, and are known as excretions.

Most secretions accomplish some important and definite office in the economy of the body. Those that are discharged on some free surface, skin or mucous membrane, as sweat, tears, saliva, etc., are called external secretions or true secretions, or commonly called simply secretions.

But our purpose in this article is not to deal with external secretions, but with another class of substances, which we feel sure are elaborated by many of the glandular organs of the body, which conclusion is arrived at from a study of their various manifestations and phenomena.

They are indispensable in the economy of the body, yet little is known of their chemical composition or function. This class of substances we call internal secretions. This term is applicable to all substances which are produced as a result of tissue metabolism, and which, after being poured into the blood, influence in varying degrees the ways of physiologic processes. The idea that secretory products may be given off directly into the blood and lymph has long been held with reference to the ductless glands. The presence of a gland with the absence of a duct for the escape of an external secretion naturally suggested it.

The term, internal secretion, appears to have been first used by Claude Bernard, who emphasized the distinction between ordinary secretion, or external secretion, and the group of internal secretions. However, it is now demonstrated conclusively that some of the glandular organs giving off external secretions, have also an internal secretion. It is maintained by some physiologists that the testes, ovaries, kidney, duodenum, and other glandular organs of the body, not formerly credited with an internal secretion, elaborate substances which produce a characteristic result upon general metabolism.

In some of the ductless glands the existence or absence of an internal secretion is still an open question. Modern interest in internal secretions is largely due to the work of Brown-Sequard, who, as early as 1856, showed by experiments that the removal of the suprarenal glands was followed by the death of the animal. In 1889 he experimented with testicular extracts. This author was led to amplify the conception of an internal secretion by the assumption that all tissues give off something to the blood which is characteristic, and which is of importance in general nutrition. Brown-Sequard was very optomistic with reference to opotherapy, that is, the treatment of diseases of different organs by extracts of the corresponding tissue, but his idea has not yet been fully realized.

Let us consider in detail the character and significance (in so far as we are able), of some

of the internal secretions. The glands of the body commonly said to have internal secretions are the thyroid, thymus, adrenals, pituitary body, and to these we add the pancreas, kidneys, ovaries, testes and duodenum. The spleen and liver we might have added to the first group. We shall discuss the secretions of these glands without giving their structure or location, as this would be impracticable in a paper of this kind.

Secretion of the Thyroid.—The most important and definite outcome of the work on internal secretion has been obtained with the thyroid. Exact knowledge of the physiologic purpose of the thyroid dates properly from 1882, when J. L. Reverden drew attention to the profound disturbances which followed the total extirpation of the gland for goitre. However, Schiff, as early as 1856, showed that extirpation of the thyroid in dogs was followed by the death of the animal in from one to four weeks, yet his work was paid little notice at the time. The experiments of Kocher, Gull, Ord and others verified the results obtained by Schiff and Reverden.

All of us are more or less familiar with the train of symptoms first named by Ord, Myxœdema. The condition resulting from a congenital absence of the thyroid gland, or from disease of the gland itself, is relieved by grafting thyroid tissue somewhere in the body of the affected individual, or by feeding him on the glands or extracts of the glands. Many wonderful cures have been effected in this way in the past few years. The treatment, however, must be kept up during life.

How are these phenomena explained? There must be some substance of vital importance in the economy of the body, elaborated by the gland and poured directly into the blood and lymph, an internal secretion. We might well mention here that recently accessory thyroids or parathyroids have been found which are in themselves of great importance. It is now demonstrated that the results following the extirpation of the two differ, but in a study of the secretion we are disregarding the difference in the function between the two glands. It is quite evident that this secretion exercises an important control over the processes of nutrition of the body. There are two general theories advocated as to the manner by which this control is exercised, which theories may also be applied to other internal secretions.

One theory is that the gland elaborates a specific substance containing iodine, and that this secretion is given off to the blood and lymph and carried to the tissues where it exercises an important regulating function upon metabolism. Excision or atrophy of the glands results in the loss of the secretion and a consequent malnutrition or perverted metabolism. Howell thinks this view preferable with the thyroids.

Another theory is that these bodies neutralize or destroy toxic substances formed in the metabolism of the rest of the body. On this theory the removal of the glands results in the accumulation of toxic substances in the body and the animal dies of auto-intoxication.

Adrenals.—Again, it was Brown-Sequard (1856) who first showed that the removal of these bodies was rapidly followed by death often in two or three days, or even in a few hours. It was observed by Addison that a profound disturbance of nutrition, characterized by a bronzing of the skin and mucous membranes, muscular weakness and profound anemia, was associated with pathological conditions of the suprarenal glands. Oliver, Schaffer, and others have verified these experiments. The conclusion is inevitable that the adrenals give off to the blood one or more specifically active substances. An alkaloidal substance was first isolated Abel from extracts of the gland, which was called epinephrin. A crystalizable substance was isolated first by Takamine and later by Aldrich, called adrenalin. The injection of the extracts into the body produces a rapid transitory effect, and up to this time treatment by means of the adrenal

extracts has been unsatisfactory. When an injection of the extract is given the animal from which the adrenals have been removed it produces a rise during the usual pre-mortal fall of temperature, and improves the general condition of the animal. The animals become more active, the weakness and uncertainty of movements are diminished and they show a great deal more vigor than before injection.

However, after repeated injections, the effect fails and it is impossible to prolong the life of the animal for more than twenty-four hours (Hultgren, O. Andersen).

When blood from an animal, from which the adrenals have been removed, is injected into an animal operated upon in the same way, the symptoms are increased and its death hastened. This experiment points rather to the theory that this secretion destroys toxic substances in the body.

Thymus Gland and Spleen.—Very little is definitely demonstrated with reference to the function of the thymus gland and spleen. Both are usually spoken of as having internal secretions, yet their character and action remain unsettled.

Pituitary Body.—A number of observers have succeeded in removing the whole of this body, which was followed by a train of symptoms similar to those following thyroidectomy. Recently experiments have been made of injecting extracts of the hypophysis cerebri into the circulation, which was followed by a distinct action upon the heart and blood vessels. According to Vincent and Schaffer we have to do here with two different substances distinguished chemically by their solubility in ether and alcohol, one being soluble and the other not. The first produces a marked fall in blood pressure, while the other increases the pressure and slows and strengthens the heart and produces marked diuresis. This effect is fairly permanent, yet diminishes with repeated injections.

Curiously enough, Howell and others think these substances do not come from the gland proper, but from the posterior or infundibular portion. Acromegally has been associated with disease of this body, but I am able to find no record of improvement by means of injecting extracts from the gland in these cases. cases.

Pancreas.—The internal secretions are not confined to the ductless glands, but are elaborated by the pancreas, kidneys and others. The importance of the external secretions of the pancreas or the pancreatic juice has long been known, but it was only recently (1889) that Mering and Minkowski demonstrated that it furnishes an equally important internal secretion. These observers found that complete extirpation of the pancreas was followed by the appearance of sugar in the urine. This condition obtained even when carbohydrate food was excluded from the diet. Sugar was found to be present when no food was given and persisted during seven days of fasting. With a plentiful supply of food the percentage of sugar may run as high as ten per cent. If only a part of the gland be left or a part even grafted in the abdomen, glycosuria does not occur. This demonstrates then that the glycosuria is not the result of injury in operation nor to the absence of pancreatic secretion from the intestine. These phenomena can only be explained upon the basis of the presence of an internal secretion poured into the blood. After extirpation of the pancreas the last trace of glycogen disappears from the liver. In spite of large quantities of food given, the animals live chiefly at the expense of their own bodies, and in two weeks may lose one-third of their body-weight.

This secretion is thought to be formed by the islands of Langerhans, and is necessary for the normal metabolism of sugar. Opie and Herzog find that in diabetes mellitus in man the islands of Langerhans show signs of hyaline degeneration or may be absent altogether. I find no record of good results from pancreatic injections.

Kidneys.—Certain observed facts indicate

that the kidneys not only remove different waste products from the body, but give off to the blood an internal secretion containing one or more substances of vast importance to the body. When they are removed from an animal or rendered functionless in man, within a few days symptoms of a severe uremic poisoning make their appearance. The most natural assumption is that the symptoms are caused by the retention of products otherwise eliminated. But it has been observed that patients have suffered with anuria for days and even weeks without showing any signs of uremia. Bradford removed one kidney from a dog and two-thirds of another at successive operations, which were followed by the death of the dog, although the amount of water and urea eliminated by the remaining portion of the kidney was far above the normal. Brown-Sequard showed that animals from which the kidneys have been removed and which show uremic symptoms are very much benefited by injection of the active extract of the kidney. Moreover, E. Myer has shown that nephrectomized animals, which exhibit periodic respiration resulting from uremia, begin to breath more nearly normally when given a peritoneal injection of kidney extract, or when blood from a normal animal is injected into its veins. These effects have only been temporary, no lasting result having been obtained from the use of kidney extract.

Liver.—Most authors do not seem to consider the liver as having an internal secretion, yet it is an organ without which the animal cannot live, although to be deprived of the bile or external secretion through a fistulous opening does not cause death. As a matter of fact, it does form two products within its cells—glycogen and urea—which are subsequently given off to the blood for purposes of general nutrition or for elimination.

Testes.—It has long been known that castration produces profound and characteristic changes in both men and animals. A steer loses the vehement strength of the bull, and becomes a relatively quiet and tractible animal. If a boy be castrated before puberty his voice does not change as it otherwise would, but remains high-pitched and child-like. The eunuch's muscles do not exhibit the power of endurance of a full-grown man, but are soft and flabby. His body usually has a bloated appearance, and becomes very corpulent. These changes we mention aside from the loss of sexual powers, which indicate that the testes exercise a very marked influence over body metabolism.

A young cock, from which both testes are removed, has testicular substance grafted in the abdominal cavity. The secondary sexual characteristics, otherwise wanting after castration, make their appearance as usual.

On Brown-Sequard's recommendation, extract of testes has found a very extensive use in the treatment of various weakness. It has been shown by experiments that are considered trustworthy, that the extract really favors the action of muscular exercise either by raising the power of the neuro-muscular apparatus, by diminishing its exhaustibility, or by improving its ability to recover. This effect lasts for a long time after the conclusion of the injections and disappears very gradually. Stewart claims that a basic substance, spermin, can be isolated from the extract.

Ovaries.—Certain characteristic changes are said to follow the removal of the ovaries, but not so profound, perhaps, as the castration of the male. It is often stated by gynecologists that castration of a woman is in many cases followed by pronounced corpulency, which indicates that metabolism declines after the operation.

Lowey and Richter confirm this conclusion by a series of experiments on fasting dogs. After the removal of the ovaries the consumption of oxygen fell on the average of 12 per cent., whereas feeding the castrated female's ovarian tissue raised the metabolism in some cases to normal and even above the orig-

inal level. The ovarian substance produces no effect on the metabolism or normal non-castrated, male or female animals; but on castrated males the increased metabolism is marked, even surpassing that produced by the extract of the testes.

I find that one author who considers the secretion and kinase, substances found in the small intestine, as internal secretions. This is not confirmed, or rather this opinion is not held by all the other physiologists whose works I have consulted.

A RECENT ADDRESS BY REV. W. H. JOHNSTON BEFORE A BODY OF MEDICAL STUDENTS.

Mr. Johnston spoke in part as follows:

Mr. Chancellor, Gentlemen of the Faculty, and the Student Body:

I understand that the young gentlemen before me have come here to prepare themselves for their life work. I am glad to be able to say to you from a personal knowledge, that you have come to the right place. This is not a college *taking* front rank among the medical schools of the land, but it is the one that *has* taken *the* front rank among the medical colleges of *America.*

The privilege of greeting you in such an institution on this auspicious day is peculiarly gratifying to me at this time. I am deeply indebted to your faculty—the really great men that have elevated this institution to its present high and well-deserved position—for this honor they have conferred upon me. I greet you, therefore, and bid you a hearty welcome to this city and to its churches. We are glad to have you among us, and trust we may be mutually beneficial to each other.

When your greatly beloved faculty selected me to deliver this address, they acted wisely—they selected a doctor's friend, aider, and abettor—one of his living, walking advertisements, who has been an unerring index finger pointing many scores of times the afflicted and diseased to the skillful hands and wise heads of the medical fraternity. Yes, when you fell into my hands you fell into the hands of a friend, and I am going to handle you well.

The first question in the catechism is, "Who was the first man?" The answer, of course, is "Adam." And this may be true. My first man, however, was our family physician. Almost the next thing I remember—after my mother's sweet tones had soothed my babyhood into childhood—was the command, "Swallow!" as our doctor caught me by the nape of my neck, and held a spoonful of the bitterest kind of medicine to my tightly-clutched lips. I *swallowed*—and got sound and well. If you don't believe it just look at me. I am a thoroughly-cured man. There was once a poor spindling little preacher on the streets of this city, who was only about six inches in diameter, approached by a countryman with a question, "Mr., can I ax you a question?" "Yes," said the minister, "you can ask as many as you like." "Well, I hope you won't be offended, sir, but I just want to ax you if you ever had the drapsy?" "No," said the minister, "I have never had the dropsy; why do you ask?" "Cause if you ever did, you are the best cured man I ever saw."

But let me whisper it, so low that the uninitiated won't hear, *maybe I would have recovered if I had not swallowed!* But I swallowed then, and I have been swallowing all he has prescribed for forty years. Isn't that wonderful? The confidence we have in these men! If these doctors would but take *my* prescriptions as I take theirs, the dose might be altogether as bitter, and altogether as effectual or more so. Now, today my joy simply knows no bounds, the thing has changed. The worm has turned, the bottom rail is on top, and you folks must do some swallowing. I am delighted.

Medical practice is no new thing. The practice of medicine and some of its results began several thousand years ago. In the Scriptures we read that "Asa," one of the kings of Israel, "was diseased in his feet"—I suppose he had the gout—"and he sought not to the Lord, but to the physicians, and Asa slept with his fathers." This tragedy of Asa is not unique.

I said I was the physician's friend, but I do

not profess to be his greatest friend. This honor is due to the earth—which, undoubtedly holds the record in this case, for it grows the roots, herbs, barks and buds out of which are made the tinctures, extracts, mixtures, and salves which supply his remedial agents. It bears also the minerals that doctors need and that are most useful in medical books, and pocket books, and last, but not least, the earth furnishes him a grave occasionally into which he may bury his mistakes out of public view. You will admit that the earth is not so friendly to the ministry!

So you have come here to learn the practice of medicine and surgery. You have made a wise choice in two ways: of the place to study, and of your life's pursuit. The profession of medicine is next to the highest in the universe, being second only to the ministry. Having made this assertion I am sure you will pardon any seeming egotism—there is none, I assure you, for I state only bare facts. Those that are wise among you will soon discover that the work of the physician and the minister are very closely akin, and oftener allied than you dreamed. These two should go hand in hand.

I met a splendid young physician once who said that he never expected to have anything to do with the ministry until they quit signing the patent medicine advertisements of the vile nostrums perpetrated on an innocent public. Said I, "Doctor, that is very foolish. Search your almanacs in which these advertisements appear, and you will find that as many are signed by physicians as are signed by the ministry, and both are in the same class; they are not much." He furthermore remarked that he never expected to join any church until they all united on doctrine and government and became one. Said I, "Doctor, that is also very foolish, for I should be a very silly man if one of you should diagnose an affection I had as appendicitis, suggesting an operation, and then I should say no physician shall operate on me until the homeopaths, allopaths and eclectics all agree and unite on a theory and practice in medicine.

At the root of all disease and death is sin in one form or another. The ministry by the gospel strives for the eradication of disease *before it begins,* by winning men from evil. The physician's work is to arrest and correct scientifically some of the effects of sin after their appearance.

The minister of the gospel, therefore, seeks the prevention of disease by grace and morality—obedience to *all* the laws of the Creator, and the intelligent, tender physician stands ready to step in and interfere with the progress of all life's ills and weaknesses to which degenerate man has fallen heir.

As I said, the profession you have chosen is a grand one, and worthy of all your labor, sacrific and concentration. Go at it! Be about it! And may Almighty God prosper you! Lives, health, happiness of born and unborn people are hinging on your work here. The slightest neglect of a paragraph of your anatomy may mean a lifetime of deformity for some sweet child. Slurring over a single page of your physiology may mean protracted suffering to a lovely, innocent mother. Give earnest heed to your materia medica—it may prevent the untimely sacrifice of a precious life. Become absorbed in the minutest details of your surgery, for therein lies the secret of your success as a surgeon. Swallow your practice whole! Then remember, it takes more than a knowledge of medicine to make a great practitioner. It takes a noble character, and its absence brings failure of the worst sort. The greatest thing in the universe is character, and your character is what you are. It is a product of the loom of life, and it is being woven every day, its warp, woof, and filling being composed of the things you do, and say, and hear, and see, and think—the resulting fabric being *character.* Through it all are running the threads of gold or the scraps of evil indestructably woven into your record. The character you establish here at

this university will go with you through life. Yours is a dangerous business in many ways. I think the most dangerous in the world. You will be exposed to dangers from contagious diseases, and exposure. Dangers from slanderous tongues and assassin's bullets. Dangers from the most terrific temptations that ever assail a man.

You will find the conditions of success difficult. Everything easy has been done long ago. Your apprenticeship will be long and trying. Modern recognition delays the laurel wreath until both your feet are dangerously near the open grave. To meet all these things you must have character, and to overcome them you need grace. Resolve deep in your soul now that Gibraltar shall be no more firmly planted in the Mediterranean than you shall be on the side of the right, and then, when in your practice the scoundrel offers you his hundreds to commit that greatest of all crimes—which shall be nameless here, because shameless everywhere—to take the life of the unborn that can't lift up even one feeble cry in its defense, just spit in his face!

Some one remarked the other day that medical students never said their prayers except just before an examination. Be that as it may, I want to give you the substance of a prayer that I hope you will remember:

1. Not that the dangers be removed or become less poignant, but that all cowardice be removed, and courage be great enough to meet all demands.

2. Not that the conditions of success be made less difficult, but that abilities, grim determination, and ceaseless industry be great enough to overcome them.

3. Not that the awful temptations be removed from your pathway, but that there may be virtue, character, and grace to conquer them.

Or, in other words, that you may be a man, not a jellyfish, squash, sissy, not even an angel, but just a man. All good doctors should break the record and go to heaven.

A little girl recently asked her mother, "Mamma, do men ever go to heaven?" She said, "Why do you ask, my child?" "Well," said the child, "I never see any pictures of angels with whiskers." "Well, since you mention it," said the mother, "I believe when a man does get to heaven, he gets there by a close shave."

The doctor must be a very wise man. I don't know who the wisest man in your faculty is, but I am sure that Dr. ——— is not far behind the wisest, for he can assimilate enough Cumberland river water to drown an ordinary man. Can find more "boogers," be bitten by more bugs, preside at the funeral of more rats, cats, dogs, guinea pigs, but with all his traps, dyes and incubators, he can't get married. I long to see the day when he shall become the delighted victim of a feminine kissing-bug and live ever happy afterwards. But alas! he has rendered himself immune to so many of the other incurable attacks that I fear he has eliminated the divine passion also.

You won't have any time to drink, frequent houses of vice, or spend your nights in the dance halls of the city. You are a $10,000 gentleman or more; don't prostitute yourself at a ten cent hovel! If you want to fail—throw away time, money, toil, just indulge in these things. No man will turn over his pure wife, virtuous daughter, innocent baby into the hands of an immoral wretch. You can't conceal your record either, for it will be written all over your face and form with an ineradicable pen of iron.

No, you won't have time for these things. Put your best into your future and your profession.

Go, boy, get ready to soothe the throbbing, bursting, splitting, aching brows of suffering fellow-mortals. Hurry up and learn to cool the burning, consuming fevers. Make the roses bloom again in the pale, emaciated cheeks, and bring back strength and elasticity to your patient's step. With your magic touch raise up the prostrated bread-winner and hand

him back to his wife and children clothed with all the possibilities of health. Stop the feeble cries and pitiful grimaces of the teething baby worn to a skeleton by disease and suffering. Make him roll with dimpled, rounded glee in its lovely mother's arms. Bid the bacillus tuberculosis release its death grip on the race, and compel a surcease of its awful record of causing one out of every seven deaths. Open up the impenetrable mysteries of cancer and hasten the day when it shall be eradicated from the catalogue of human woes. Restore to these poor bodies of ours the ability to live out their cycle of existence without these deadly interferences. Don't give up, don't stop, don't be discouraged, and may the Hand of Infinite Knowledge gird up your loins with truth and grace!

EDITORIAL

DR. WITHERSPOON HONORED.

The election of Dr. J. A. Witherspoon to the presidency of the Mississippi Valley Medical Association, which convened in Louisville, October 13, 14 and 15, was a deserved compliment to one of the South's foremost internests.

The Association has been in existence over a third of a century and during that time has had such prominent men as Byford, Hibberd, Mathews, Reed, Wishard, Walker, Lewis, Brown, Carstens and others for president.

Once before Nashville has been honored in the selection of Dr. Duncan Eve to the same high office.

There is perhaps no clinician in the South so well known as Dr. Witherspoon. For years he has been eminent as a teacher, and is a forceful debater on the floor of the various societies which he attends. He has done much in the medical councils of the nation.

The next meeting at St. Louis, under the presidency of Dr. Witherspoon, will doubtless be one of the most brilliant in the history of the organization. (W. D. H.)

THE USE OF TUBERCULIN IN THE TREATMENT OF TUBERCULOSIS.

Since Koch's discovery of the tubercular bacillus in 1880, and demonstrated that it was the cause of tuberculosis, naturally the profession has put forth strenuous efforts to find the specific for this disease. As this is the day of serum therapy it was but natural that the remedy should be sought which was evolved from nature's own laboratory, thus many forms of tuberculin have been suggested under as many different names, and yet it is but fair to state that no satisfactory results can be claimed except in primary cases where the treatment was given in connection with the well-known efficacy of outdoor life and forced feeding; therefore, it is difficult to determine just how much good this treatment has done. There are two notes of warning which I feel should be sounded at this time. In the first place the profession should be very careful in the selection of the product they use, as in more cases than one coming under the writer's observation the use of the commercial preparations on the market have produced tuberculosis in the guinea pig; therefore, it would seem essential that the general practitioner should have the remedy thoroughly tested by a laboratory expert before he dare inject it into human beings. On the other hand, I believe the tendency of the day is for laboratory men without proper clinical experience and that valuable judgment which comes from years of bedside observations, to rush enthusiastically into work of this kind. One should be very cautious about the application of such remedies, be they ever so pure, without proper selection of cases in which the treatment should do good. Of course it is but natural that with a disease of such widely spread death-dealing character that enthusiasts may honestly carry a treatment promising any good whatever entirely too far. So that, in the judgment of the writer, it would be far better if a combination of both laboratory and practical bedside experience could be joined together in the battle being waged against this fell destroyer of mankind. And while it must be admitted that it is still in the experimental

stage, yet, enough good has been gotten to warrant the statement that with the continued efforts on the part of investigators to find specific means for combating the cause of consumption combined with the proper observations of men whose bedside and clinical experience gives them the right to suggest and select proper cases for the use of such remedies. When the people at large become educated up to the present standard of preventive medicine and will pass laws and see that they are enforced for the benefit of mankind, it is not too much to say that the light is gradually dawning and the clouds of darkness which have so long covered up the trail of this terrible scourge will be lifted, and this disease which has the largest mortality of any other known disease, will be gradually controlled and driven from our midst. It would then seem of the greatest importance that each doctor become an instructor of the people so that their co-operation and aid may be had and proper methods be adopted to get control of this Great White Plague.

EXPERT TESTIMONY.

It would seem justifiable that a note of warning be given the profession because of the present status of medico-legal and expert testimony or evidence often demanded of the doctor whether he be especially qualified in the line of evidence necessary in the case in question, being chosen more for his professional standing in the community, and when placed upon the stand unfortunately is too often influenced by the side employing him. The doctor, under such circumstances, should be very careful in the first place in assuming to be an expert on lines foreign to his regular work; secondly, if he would uphold the dignity of the profession and not bring about criticism from the laity and public press and his own profession, he should be absolutely unbiased in his evidence, answering questions entirely upon a basis of facts, never straining a point or covering up one for the benefit of either side, if he would protect the sacred heritage of an untarnished medical escutcheon handed to us by our forefathers.

The readiness to establish insanity where crime has been committed has grown remarkably frequent in the last decade, and too often doctors are misled by hypothetical questions, thus placing themselves in the embarrassing attitude of being a witness for the defense, and, I am sorry to say, too frequently originating mental conditions unknown and unclassified, that the symptoms may fit the particular case, thus bringing reproach and just criticism upon the profession whose proud boast should be that their function is to emeliorate human suffering and prolong human life and, in hopeless cases, smooth the pathway to the Great Beyond, not to interpose by any sort of unwarranted testimony that would allow the truly criminal to go unwhipped of justice. He should answer all question based upon a thorough knowledge of his subject regardless of the case in question. While it is perfectly legitimate that a fee be paid and received for expert evidence—in the very natrue of things the physician charging for such expert testimony should be what he assumes to be—an expert in that particular line of work, and, above all, he should uphold the dignity of the profession by telling the plain, unvarnished truth, never allowing himself through sympathy or obligation to deviate from the facts, or show his sympathy by in any way shielding or protecting those employing him, unless he can conscientiously do so. If every doctor summoned to appear in such cases would take the high ethical stand that the facts must warrant the statements for the benefit of those employing him, there would be less criticism and fewer cases hiding behind the shield of imaginary mental abberrations. Let the motto of expert witnesses be the trite old adage, "Hew to the

line, let the chips fall where they may." Of course the number of men in the profession who can be influenced to color facts, or through sympathy give evidence in courts unwarranted by the condition of those who unfortunately or otherwise have committed crimes, is very small, and deserve condemnation because they reflect upon the entire profession, and while there is a place in the medico-legal world for the truly scientific expert, that justice may be secured, but it is a very delicate position of great responsibilities and should never be abused by either ignorance or weakness of character.

CORRESPONDENCE

PHILADELPHIA, AUG. 21, 1908.

To the Editor of
THE SOUTHERN MEDICAL JOURNAL.

DEAR SIR—I want to remind the members of the medical profession through your JOURNAL that contributions to the Congress must be announced to the Secretary before January, 1909. It is desired by the Committee that the manuscripts should be in their possession by the 31st of January, 1909. It should be known that the time for the reading of a paper does not exceed twenty minutes and that manuscripts should be clearly written, as the correction of the proofs is attended to at the office of the General Secretary. Copies of the manuscripts, will be returned by July 31, 1909. The General Secretary is Professor Emil Grosz, M.D., the address, Budapest, VIII., Esterhazy-utcza 7.

Arrangements are in good progress and the preliminary program contains the names of distinguished men throughout Europe and this country. Professor Osler writes that there is much enthusiasm. Arrangements are under way for an excursion to Constantinople, returning by the way of Greece.

There will be no difficulty about physical accommodations for the members.

Blank forms of application for membership to the Congress and for the presentation of papers can be had of the Chairman of the Committee. Very truly yours,

J. H. MUSSER, M.D.

1927 Chestnut St., Philadelphia, Pa.

AMERICAN COMMITTEE OF THE SIXTEENTH INTERNATIONAL CONGRESS.

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A. A. VanDerVeer, M.D., Albany, N. Y.

REPORT OF CASES

A CASE ILLUSTRATING THE ADEQUACY OF COCAINE ANAESTHESIA IN INGUINAL HERNIOTOMY.

PAUL DEWITT, M.D., NASHVILLE, TENN.

On the night of October 21, 1907, I was called at 3 a. m. to see Mr. W., aged 52, who was suffering from an irreducible hernia, left inguinal. On examination I found a mass the size of a walnut protruding from the external abdominal ring. It was firm, nodulated, and fairly tender to the touch. An effort at reduction by taxis was made, but failed, so an ice-bag was applied.

The following history was elicited: Twenty years ago patient complained of pain and protrusion in the right inguinal region. He sought medical advice and a diagnosis of hernia was made, a truss being duly applied and worn constantly. Five years ago the same condition appeared in the left side. A double truss was now applied and worn for three years, when the left hernia appeared to be cured. The left truss was removed without sign of recurrence till October 19, 1907. On that day, during a spell of coughing, the mass came down again, but was easily replaced. The next morning it came down about ten o'clock and refused to go back. Patient lay down all day and was without pain till four o'clock p. m., when it began to ache. Bowels moved several times during the day and he was without nausea and colicky pains.

Our ice-cap, applied at 3 a. m. relieved pain sufficiently for short naps till daylight, when I again tried taxis without avail. At noon I convinced him that his safety lay in an operation and he was removed to St. Thomas Hospital. In the afternoon I operated, using cocaine anesthesia. The solutions used were one-fifth of one per cent for skin and nerve trunks and one-tenth of one per cent for all other tissues. According to my usual custom, one-fourth of a grain of morphine (without atropin) was given hypodermically twenty minutes before the operation. Opening the sac I found a mass of omentum larger than a walnut, with a very small and constricted pedicle. It was already showing signs of interference with the blood supply and later, cutting into the excised portion, a good sized blood clot was found. This was a strangulated epiplocele taken early enough to avoid severe constitutional symptoms. The omental mass was ligated and excised, sac ligated and removed and sutures placed as usual.

Four days later I operated upon the right hernia, on which a truss had been worn for twenty years. This sac was thickened and adhesions were dense; however, they were handled successfully without pain.

Convalescence was uneventful and both wounds healed beautifully.

Mr. W. came into my office a few days ago and I examined him for end results. I found two very small cicatrices and the rings absolutely sound. It is now ten months since operation and with the perfect results so far I can very safely predict there will be no recurrence. He assures me he feels better and safer than for many years and is a most grateful patient.

I report these operations to demonstrate the adequacy of cocaine anaesthesia in inguinal herniotomy.

1. They were both difficult types of hernia

for local anaesthesia. The first was painful in itself from strangulation and the second full of adhesions. Yet the patient says he suffered so little pain during the operations as to count it none at all.

2. My promise to operate without giving him ether was a great factor in inducing him to submit to the first operation, and he would not have consented to the second if he had taken ether to be repeated in four days.

3. If the strangulated contents had proven to be intestine, hot applications could have been applied indefinitely, without inconvenience to the patient, and, in case a resection had been necessary, that could have done with little trouble.

4. After each operation the patient had his meal of broth, instead of ether vomiting or at least starving all day.

5. Every step was taken with cocaine anaesthesia that could possibly have been done with general narcosis.

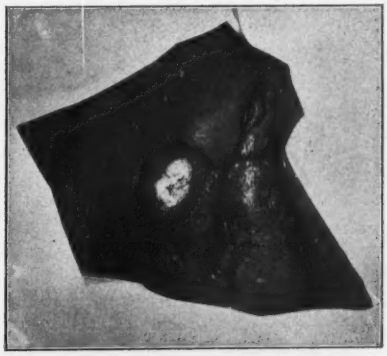
INDURATING EDEMA OF THE VULVA.

BY L. E. BURCH, M.D., NASHVILLE, TENN.

A woman 38 years old presented herself at my clinic in the month of September, giving the following history:

Eight years ago a small ulcer appeared on the vulva, and in a few day's time this was the size of a half-dollar, and in the course of a month the ulceration had disappeared, but this was followed by an induration which from that time to date of operation gradually increased, involving both of the labia. On examination a large mass was found on each side of the vagina extending from the symphisis in front to two inches beyond the anus behind. These tumors were about eight inches in length and three inches in width. They were hard and in several areas were ulcerated, and were not sensitive to the touch.

The woman gave a distinct history of syphilis, in fact had been on mercury and iodides for the past eighteen months without any beneficial results. As the tumor was of too long standing for malignancy, and as the anti-syphilitic remedies had failed after a thorough trial, and several blood tests by Dr. Wm. Litterer failed to show the filaria hominis sanguinis, thus excluding elephantiasis, it was decided to remove the growth. The case was diagnosed as one of indurating edema of the vulva, due to syphilitic infection. Indurating edema in many instances is a complication of



the initial hard chancre, but it may develop at a later period. If the disease is seen early and anti-syphilitic remedies are vigorously pushed resolution will usually occur; but in the cases where the condition has persisted for a long period of time the anti-syphlitic remedies have little if any effect.

But little difficulty was encountered in the operation, although the hemorrhage was rather profuse. The flaps were brought together with some tension, but strange to say, healed kindly. The woman today, four weeks after the operation, is perfectly well.

The lesson to be drawn from this case is this—that if the condition had been recognized at an early date and appropriate treatment given, this woman would have been saved seven years of suffering and in addition a severe surgical operation. The illustration gives but a poor idea of the enormous size of the growth.

TERATOMA OF OVARY.

F. G. DU BOSE, M.D., SELMA, ALA.

(Report of a case brought to operation on account of strangulation resulting from a twist of its pedicle.)

In the course of operations for the removal of tumors it is not rare to meet with dermoids containing heterogenous tissue elements in varying stages of development from a mere resemblance up to a complete duplication of one or more mature body structures.

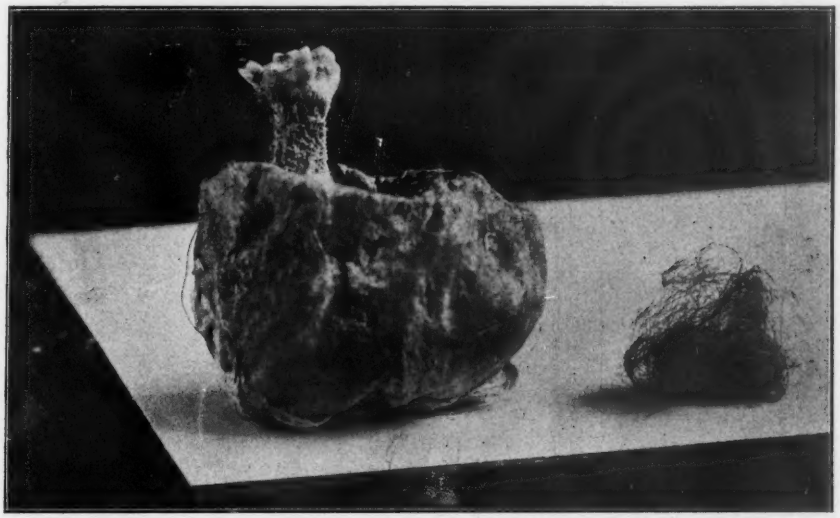
These result from embryonal cell misplacement. The case here presented is of interest not only on account of the tumor contents, but because the clinical history and physical examination was sufficiently clear to permit a diagnosis of a tumor strangulated from torsion at the first visit I made this patient.

CASE REPORT.

Mrs. M., age 48; multipara; healthy; robust; past history, negative; menstruation, regular and normal; suffered no pain in side till the morning of Nov. 28, 1907, when, on getting out of bed she felt pain in her left side. She had stooped and kneeled down on the floor, wiping off and under a new couch, which had been placed in the room the previous evening, and first thought the pain was a stitch in her side. In an hour's time this pain had so increased in severity that it was unbearable and a doctor was hurriedly sent for; he spent some time with the patient and gave several hypodermics of morphine before the pain was relieved. Though under the influence of opiates, she suffered pain at intervals. The following morning I was called and found, on palpation over left inguinal region, a movable tumor, painful on pressure, and some rigidity of the overlying muscles. Further examination per vaginam disclosed a pedunculated tumor of the left ovary, larger than a man's fist. The neoplasm was exquisitely sensitive and painful on bimanual palpation. Temperature and pulse normal. Operation advised and patient admitted to my sanatorium at 4 p. m. A saline enema was given with effectual result. Patient still suffered with pain in side, become severe at intervals. Hypodermic of codein, ½ grain, was given. She spent a restless and painful night, and morphia and atropia were given at 7 a. m.; at 8:30 patient was carried to operating room. Gas-ether sequence anæsthesia. Left rectus incision, close to middle line. A reddish-black and ecchymotic tumor was delivered through incision. The pedicle, about two inches long, was twisted on itself, and the vessels supplying the tumor were thrombosed;

the pedicle was ligated flush with the broad ligament and the tumor removed. The right ovary and the appendix were also removed. Time of operation, forty minutes. The patient made a rapid recovery, and is in robust health at present.

attached to the cyst wall. The strands of hair are from 6 to 14 inches in length and of a red color. A mass of yellow fat filled the cyst cavity, and the hair was intermingled with this fatty substance. The shape of the tumor was ovoid and measured ten and eleven inches



The accompanying photograph shows the tumor turned inside out. The shaft of bone is 1⅝ inches high by 2¼ inches in circumference. There are six well-formed teeth rather symmetrically arranged around the free end of the bone, the base of the bone being firmly over its smaller and greater circumferences, respectively. The six teeth comprise 1 well-developed superior molar, 2 well-developed superior bicuspids, 1 poorly-developed bicuspid, 2 poorly-developed lateral incisors.

ABSTRACTS OF CURRENT LITERATURE

MEDICINE

DIFFICULTIES OF DIAGNOSIS.

(Arthur J. Hall, in *The London Practitioner,* Vol. 71, No. 3, September, 1908.)

Diagnoses are limited to the arbitrary divisions or pigeon-holes as accepted by the profession, but are continually being subdivided, as the knowledge of leucocytes has divided anemias, while the discovery of tubercle bacilli has joined together other divisions. The difficulties of arriving at a satisfactory diagnosis may arise in various ways, either from (1) Insufficient knowledge, (2) insufficient experience, or (3) insufficient data. By insufficient knowledge he means either general or special knowledge. He speaks of insufficient experience as difficulty in putting various symptoms and signs in their proper positions. Mistakes come from over-confidence, hasty diagnosis, or careless examinations. The data may be there, but is not sought for, or it may not exist. Many cases may present data either insufficient in quantity or of doubtful quality, so that diagnosis is impossible; in such cases it is well to make "provisional diagnosis."

In doubtful cases of intracranial tumor, it is well to remember how rare intracranial tumor is, and how numerous the possible causes of headache, vertigo and vomiting; and in case of tumor these, with optic neuritis, may not occur until late in the disease. It is naturally the tumors of the "silent" portion of the brain which gives the greatest diagnostic trouble.

Hysteria following local injury or disease frequently cause difficulty in diagnosis. Hall thinks the mimicry is usually only superficial and errs, as a rule, by its excess. One is more liable to be misled in hysteria because of the local injury.

Phantom abdominal tumor is very puzzling. In the cases Dr. Hall has seen they are associated with an arching upward of the lower dorsal spine and practically disappeared when made to lie flat. A few whiffs of ether will further clear the diagnosis.

In hysterical monoplegias, hemiplegias or paraplegias, if the evidences are gone through in some definite order, such as motor symptoms, sensory symptoms, trophic symptoms and reflexes there is less chance for error. The question of muscular power should be carefully gone into. Increased knee jerk, with loss of plantar reflex, suggests hysteria. The hysterical skin affections may be diagnosed by the following broad rules: (1) They do not fit in with any ordinary skin disease; (2) the outline of an individual patch frequently shows some angular contour, such as never seen in spontaneous disease; (3) they are almost always in some actually or easily exposed part, visible either to the passer-by, or to the domestic circle; (4) they are always in a position which can be got at easily by the hand, usually the right hand; (5) they are characterized by their rapid power of completely healing when protected, and their extremely sudden reappearance either on the same or other sites.

The difficulty in diagnosing plumbism is due to the fact of overlooking Burton's blue line on the gums, but when once seen is easily and surely diagnosed

Carcinoma of the œsophague is easy to diagnose and attracts attention by one symptom, viz.: dysphagia. This symptom is not constant, which makes it difficult to diagnose.

Early gastric and intestinal new growths are very difficult of diagnosis, by early meaning visible and palpable growths, an exploratory laporotomy not being justified until all methods of diagnosis have been carefully and fully gone into; although the mortality is low, it is comparatively high as compared with the medical treatment of non-malignant dyspepsia. (O. N. B.)

THE DIAGNOSIS OF DUODENAL ULCER.

(B. G. A. Moynihan, M. S., F. R. C. S., Surgery, Gynecology and Obstetrics, October, 1908.)

In a discussion given before the Chicago Medical Society May 14, 1908, Moynihan says the diagnosis of duodenal ulcer rests not so much upon the alterations in the size or actions of the stomach, nor upon the chemical changes in the contents of the stomach, but rather upon the anamuesis.

After food is taken the patient is free from pain, the period of an hour or two which follows a meal is the best time in the day. After a time, varying from one and one-half to four hours after the meal, a sense of uneasiness is noted in the upper part of the abdomen, a burning, gnawing sensation develops, and there is a bitter taste in the mouth. With it may be eructation of food or gas, bitter and acid in taste. The pain, which gradually increases, may be relieved, often considerably, by belching or by pressure. As it increases in severity it strikes through to the back to the right of the middle line, and it may radiate around to the right side of the chest. All patients discover that food relieves them, and many carry biscuits in their pocket, or take milk or a dose of alkaline medicine as soon as the uneasiness develops. In several cases the pain has been indistinguishable from a mild hepatic colic, but came constantly two or three hours after taking food. The pain comes at a time when the patient should be beginning to feel hungry for his next meal, and for this reason the term "hunger pain" seems appropriate. The length of relief after a meal varies according to the character of food taken. The more substantial the food the greater the interval of relief. It is not unusual for a patient to say: "I've a good appetite; I can take anything and never vomit." After a time the symptoms may improve, and even disappear, to reassert themselves after a longer or shorter period. During this interval the patient may be perfectly well, enjoy food, and gain in weight. The attacks are more frequent and more severe in cold weather, and seem especially apt to come in times of stress and worry. (W. M. McC.)

AN UNUSUAL PAROXYSMAL SYNDROME, PROBABLY ALLIED TO RECURRENT VOMITING.

(Theodore C. Janeway and H. O. Mosenthal, *Arch. of Med.*, Oct. 15, 1908.)

Under the above title, Drs. Janeway and Mosenthal report a most interesting and unique case:

A Jewish school girl of 16 has suffered from recurring attacks of a peculiar nature. The mother had noted the first attack when the patient was two weeks old. In early life the frequency was about one month, the longest interval of freedom was ten weeks. For one year attacks had come weekly; for three months every Friday, with absolute periodicity. During six months observation she had fourteen attacks, five severe, and nine mild. The prodromal period is characterized by uneasiness, anorexia, and epigastric or abdominal discomfort, lasting four to twelve hours. This stage is occasionally protracted, and may pass off without an attack. In the cresendo period all the symptoms increase rapidly;

prostration, pain, fever, tachy cardia, and polynuclear leucocytosis. The pain is chiefly abdominal and colicky, but may be reflected to one or the other shoulder or hip, even to the feet. There is abdominal rigidity and tenderness, the latter varying in localization, but usually situated to one side of the umbilicus. Occasionally there is headache, and salivation is always marked. In severe attacks constant nausea and retching with vomiting once or twice at the height of the attack occurs. The vomitus consists of the previous meal with mucus and free hydrochloric acid. The tongue is heavily coated. The maximum temperature was 104°; pulse 140; leucocytes 28,800. The duration of this stage is eight to sixteen hours. The period of recovery is characterized by rapid subsidence of pain first; then fever, rapid pulse, and leucocytes last. Within twelve hours the patient feels well and has a voracious appetite. The loss of weight, four or five pounds, is regained in a few days.

The urine was diminished in quantity, but never deposited urates or phosphates. Sugar was never present. Indicanuria occurred at times. During the attacks diacetic acid was present in considerable quantities, but rapidly disappeared. This acidosis is attributed to carbo-dydrate starvation.

Physical examination during the interval revealed no abnormal viscera; the abdomen was soft and painless, the pupils were moderately dilated and reacted to light. Knee-jerks were readily obtained with Jandrossik reinforcement. No treatment had any influence over the patient's condition.

The diagnostic possibilities suggested are:

1. A recurring infectious syndrome, due to a persistent inflammatory focus, with occasional absorption phenomena. The intermittent fever of biliary obstruction is the best analogue of this type.

2. A recurring toxemic syndrome, allied with such definite, but still unexplained conditions, as gout, recurrent vomiting, or perhaps migraine.

3. A recurring gastric crisis. The gastric crisis of tabes have many features in common with this patient. Epilepsy is also mentioned under this heading. The authors leanings are toward considering the syndrome, a toxic, one of endogenous origin. (W. M. McC.)

OBSTETRICS

EXPERIMENTAL STUDY ON HEMORRHAGE FOLLOWING SECTION OF UTERINE AND OVARIAN VESSELS IN DOGS AND ITS POSSIBLE BEARING ON RUPTURED PREGNANCIES.

(Hunter Robb, M.D., *American Journal of Obstetrics,* October, 1908.)

In order to throw some light on the question as to how much blood a healthy individual may lose without fatal results, Robb has carried out a series of experiments on dogs. Since it will doubtless be maintained that dogs can naturally stand a greater loss of blood than human beings, he endeavored to make the tests so severe that this difference in the factor of resistance would be at least equalized.

Thirty-one experiments in all were performed. The ovarian and uterine vessels were divided under varying conditions, the cut ends of the vessels left without ligature or other attempts at haemostasis. Various observations were made at the same time as to the effect of the operation on blood-pressure,

haemoglobin, pulse, respiration, and the clotting time of the blood.

Robb states that his experiments seem to show that, in dogs at least, hemorrhage from large internal vessels ceases before it is sufficient to prove fatal. No dog succumbs to the hemorrhage following excision of the ovary, division of the broad ligament with section of the left uterine vessels, or from section of the uterine vessels on both sides. Nevertheless Robb considers that he probably subjected the animals to as great a risk of bleeding to death as is incurred by the average woman suffering from a ruptured tubal pregnancy.

From these experiments the author concludes that he is more and more justified in believing that the intra-abdominal hemorrhage, such as is met with in women suffering from collapse after the rupture of an actopic gestation, is not sufficient in itself to cause a fatal termination in these cases. Death is caused by shock which may be increased by various procedures. The hemorrhage *per se* is rarely, if ever, the sole cause of death.

One experiment goes to show that the super-added shock belonging to immediate operation is likely to be very dangerous.

The experiments further show that the clotting probably occurs within fifteen to twenty minutes after the vessels have been incised, and that the time of clotting can be known by observing the haemoglobin index. The subcutaneous injection of normal salt solution in all probability does not cause a renewal of the hemorrhage. But manipulation of the tissues by disturbing the clot causes the bleeding to start up again, and may thus be mistaken for a continuing hemorrhage. The experiments show that by the use of bandages, but more particularly by the application of more or less weight to the lower abdomen, the pulse is rendered slower and of better quality, and that the haemoglobin is kept up.

(G. R. H.)

PYELITIS IN PREGNANCY AND THE PUERPERIUM.

(By Hiram N. Vineberg, M. D., in *The American Journal of Obstetrics and Diseases of Women and Children.*)

Dr. Vineberg, after discussing the history of this affection, gives to Kruse, Roblaub and Cragin the credit of exciting the interest of the medical world as to its importance, and says that the disease occurs much more frequently than the recorded cases would indicate: 5.86 per cent. in the Copenhagen maternity, where the urine of every inmate is very carefully examined. Of these 6.56 per cent. occurred in primapara and 4.84 per cent. in multipara.

He attributes the cause to two conditions: obstruction in some part of the urinary tract, and to infection by pathogenic bacteria. He explains the increased frequency of pyelitis in the right kidney upon the relation of the right ureter as it crosses the brim of the pelvis, making more of an acute curve and lying more exposed than the left ureter, as well as the position of the pregnant uterus itself, lying as it does more frequently in the right oblique diameter of the pelvis. He mentions the theory of Cathala that the obstruction is due to the traction upon the ureters by the inferior uterine segment as it rises up in the pelvis, also stressing the possible importance of ureteral and vesical hyperemia during pregnancy. No matter how the obstruction is brought about, all agree as to its existence.

Infection is brought about in three ways: (1) Ascending from the bladder; (2) through the blood current, i. e., descending from the kidney; (3) through the lymph-channels. The colon bacillus was the infecting agent in the vast majority of cases; 43 out of Albeck's 55 cases, streptococcus 9 and staphylococcus albus 3 times.

In the writer's observation the gonococcus playes no inconsiderable part in the causation

and he quotes from Mirabeau, Opitz, Schwab, Gaussel and Faurnier in corroboration. He says where marked bladder symptoms precede the kidney symptoms, gonorrhœal infection should be suspected. He denies that the disease is more common among primigravisdæ, and cites Opitz's 66 cases in which 32 occurred in primigravisdæ and 34 in multipara. It occurs in the majority of cases during the latter half of pregnancy. Clinically one meets with two varieties, differing chiefly in the onset. In one there is a preliminary period of longer or shorter duration, of bladder disturbances characterized by frequent and painful micturition, with some tenesmus and a sense of burning over the bladder region. In addition there is more or less malaise.

In the other variety the onset is sudden, resembling an acute infection, ushered in by a chill and followed by a marked elevation of temperature. The chill may be repeated daily and the morning and evening temperatures show marked remissions from 97 to 104. The pulse bears no definite ratio to the temperature and will vary from 90 to 120. The patient gives the impression of being seriously ill, the tongue is coated, loss of appetite, nausea, and even vomiting may be present. The pain at first is diffused over one-half of the abdomen, but in a few days becomes localized over the affected kidney, usually the right. The kidney, as a rule, is not found enlarged, but deep pressure will elicit marked tenderness. Thickening and tenderness of the ureter as it crosses the anterior wall of the vagina is present in a certain number of cases. At first the urine may show no change beyond a trace of albumen and a high color. In the course of a day or two, it will present the characteristic features. Acid reaction, pungent odor, specific gravity from 1006 to 1020; turbidity while fresh, with a thick sediment on standing; this microscopically consists chiefly of pus, a few red blood corpuscles, numerous caudate epithelia, a few hyaline granular casts and numerous rod-shaped bacteria. Colon bacillus in pure culture, rarely mixed with streptococci or staphylococci, and in a certain percentage of cases the latter cocci alone. In a few the gonococcus will be the only organism found.

The quantity of pus will vary in different specimens passed in the 24 hours; it may occasionally be absent for a day, showing complete obstruction for that period.

In cases due to colon bacterial infections, intestinal disturbances as diarrhœ or obstinate constipation precede the onset of symptoms. The urine after three or four days has a milky turbidity and does not become clear on standing; it contains pus corpuscles and generally a pure culture of the colon bacillus.

Dr. Vineberg continues his article with the differential diagnosis between pyelitis of pregnancy and the puerperium and such conditions which are mistakenly called appendicitis, acute cholecystitis, typhoid fever, acute salpingitis, retained dead fœtus and pleurisy. He completes the very excellent article with a summary of cases which he has treated. (P. B.)

PROCTOLOGY

THE TREATMENT OF SYPHILITIC STRICTURE OF THE RECTUM.

(The *Proctologist,* September, 1908.)

Dr. W. M. Beach, of Pittsburg, states that if the case is seen early much can be done to avoid disastrous consequences; but, as the disease is so insidious in onset and development by virtue of the fact that it is usually located in the painless area, and that nothing short of obstipation drives the patient to seek advice, it is obvious that palliative treatment only increases the irritation and produces a greater degree of stricture. For this reason

the injection of fluids is needed only for cleansing purposes and such procedures as gradual dilatation by the passage of bougies, forcible divulsion, proctotomy and even excision are only of temporary benefit.

The author concludes that a permanent colostomy is the preferable plan of treatment, as this procedure permits of effective irrigation of the rectal cavity. He considers ascending doses of strontium iodide of value, but states that he has never been able to destroy the syphiloma with it.

Irrigations should be used daily for the first month and less frequently thereafter. For this purpose normal salt solution may be used, alternating with solutions of potassium permanganate, or nitrate of silver, twenty grains to the quart, or ichthyol, a drachm to the quart, or boracic acid.

Defecation through a properly constructed inguinal anus is complete, painless and under reasonable control. The patient soon becomes reconciled to his condition, and rapidly improves in health.

The author draws the following conclusions:

1. Syphilitic stricture of the rectum is the result of badly treated cases of syphilis in the early stages.

2. It is more frequently found in the female for the reason that the primary lesion is more apt to be overlooked.

3. Direct surgical attack of rectal syphiloma does not insure permanent relief, but rather aggravates the trouble.

4. Specific constitutional treatment should be instituted with the hope of favorably improving the diseased tissues.

5. Permanent colostomy is the treatment of choice, in that it renders possible effective irrigation and restores the bowel function.

(A. B. C.)

AMEBIASIS: ITS SYMPTOMATOLOGY, DIAGNOSIS, SEQUELAE AND TREATMENT.

(*The Proctologist,* Sept., 1908.)

Dr. John L. Jelks, of Memphis, Tenn., calls attention to the prevalence of this disease in the South.

Marked differences have been ascribed to the ameba as to its character and action in different cases, especially with reference to their phagocytic properties and their motility. The author refers to associated infection as playing an important role in many cases and attributes to this mixed infection the difference in character of ulceration in the higher parts of the colon and that in the rectum.

Cases of amebiasis are referred to as occurring in nests, in the low marshy districts, in the sparsely settled alluvial sections and in the suburban mill districts of the city. None of the cases in the city were residents of the highland portion and all of them partook of fresh vegetables which were grown in the bottoms and washed with water from shallow wells.

The author views with suspicion all cases of violent acute dysentery or chronic diarrhea with mucus discharge. He states with emphasis that he has not found the symptoms of dysentery and diarrhea essential to the existence of amebiasis; on the other hand, he has encountered cases in which constipation or obstipation was complained of, and he calls special attention to this statement as being contrary to the generally accepted theory.

In the majority of cases, however, the patient complains of and the predominant symptom in chronic cases is that of recurring diarrhea, which has existed for several months or years, associated with a quantity of mucus, occasionally blood stained.

The symptoms in malignant acute cases are quite severe from the onset, the patient suffer-

ing great exhaustion from numerous movements and the septic condition which soon ensues. Sometimes large casts of mucosa are expelled, as also casts of mucous and fibrin. These latter are most fatal and should they recover from the acute symptoms, very often lapse into a sub-acute or chronic condition which may last for years with periods of abatement and exacerbation of symptoms.

The author reviews the symptomatology and states that a diagnosis might be overlooked without the aid of the microscope, which, if put into more general use by clinicians, in the South especially, would reveal heretofore unsuspected cases as of this origin.

In reciting the sequelae and gross intestinal pathology in a series of twenty-five cases, the author refers to many features, and states that in two recently treated cases, small openings or ulcers extended into extensive sub-mucus abscesses.

Often the intestinal mucosa presents only slight ulceration, or a general red granular appearance, or is perhaps edematous, and though these are amebic, a mixed infection is thought accountable for certain phases of this process, for the amebae prefer the juicy sub-epithelial structures, and the pathology is chiefly sub-epithelial. The colon bacilli and streptococci are accorded importance in part of the inflammatory process, especially in the rectum. Thus is explained the great difference in the character of the ulcers found there and those seen in the higher portions of the colon.

Autopsy in one case showed marked strictures and thickening of rectal wall, while in the splenic flexure, which was the seat of fatal perforative ulceration, the ulcers were sharp cut, round and oval seen through a thin gut with only lightly adherent omentum covering the perforation.

Periods of exacerbation and abatement of symptoms in these chronic cases are due to several causes, chiefly the difference in activity and virulence of different generations of this protozoa. Certain differences exist also in activity in sporulation and in the process of encystation.

In the twenty-five cases cited by the author he noted four cases in which infection in the liver was diagnosed, two of which were verified by operation; five cases of stenosis, more or less marked; two cases of valvular stenosis; two perforations, one of which was verified by autopsy; one case in which casts of mucosa were expelled; one case from which seven adenomata were removed from the upper rectum; in three cases jaundice was marked; three cases had hemorrhoids and one case had rectal abscess and fistula; one case suffered an impaction in the sigmoid, the size of a fetal head, the result of stenosis below and thinning of the musculosa above; one case had infected gall bladder which required drainage; in four cases appendiceal involvement was diagnosed; in one case in which appendicostomy was performed, adhesions were found, the result of an attack since the dysentery was established, and in this case great thickening of the peritoneum and a tubercular family history afforded reason for suspecting a tubercular complication. However, Lewis' law could not be verified.

In the treatment of these cases the author first emphasizes the importance of a properly selected diet. He uses solutions of formalin and boric acid and formalin and copper phenolsulphonate in high irrigations. His topical applications through the sigmoidoscope he uses varying strength solutions of silver nitrate, followed by instillations of boric acid, arestol, iodoform or bismuth subintrate in olive oil. The washing away of necrotic material and the infectious organisms explains in part the action of the irrigations, but they also stimulate the vaso-motor supply, relieve congestion and stosis, increase the supply of blood to the parts and perhaps aid in the development of antitoxic bodies. (A. B. C.)

DERMATOLOGY

LUPUS ERYTHEMATOSUS.

(J. P. Kanoky, Kansas City, Mo., Med. Rec., Sept. 12, 1908.)

Kanoky reports six cases from which he decides that the iodide-quinine, or iodide-salicin, method of treatment gives excellent results, especially when used early in the disease. In cases of long standing he recommends the local application of salicylic-pyrogallic-collodion. He finds the x-rays of value in some cases.—(J. M. K.)

LIQUID CARBON DIOXIDE IN DERMATOLOGY.

Pusey was the first to call attention to $C.O.^2$ in dermatology. Since he gave his reports it has been used by many. The gas from the large iron cylinder ordinarily used by the maker of carbonated water, is the material that is used. A chamois skin with a sort of pocket made in the middle of it is used to collect the carbonic snow from the valve of the cylinder. The snow can be moulded to fit any size lesion and is placed on until the desired extent of freezing is produced; after a time a mild sloughing follows. It may be used with benefit in lupus-vulgaris, warts, neavi(such as birth-marks), epitheliomata, etc.—(J. M. K.)

QUININE IN DERMATITIS EXFOLIATIVA.

(Journal Cut. Dis., W. H. Mook, St. Louis, Mo.)

Mook reports six cases in which he used quinine in larger doses, with striking tolerance. The urine showed no hematuria or albuminuria, even when 80 or 85 grains were given in 12 hours. Cinchonism was produced to the extent of extreme tinnitus aurium before the dose was reduced. The effect in all cases was noticed within a few days, the subsidence of the exfoliation and the reduction of the erythema and edema were rapid. In one patient the reduction of the dose from 60 grains daily to 20 grains allowed a slight relapse, which was controlled by raising the dose again.—(J. M. K.)

EYE, EAR, NOSE AND THROAT

THE STATUS LYMPHATICUS, WITH PARTICULAR REFERENCE TO ANESTHESIA IN ADENOID AND TONSIL OPERATIONS.

(W. Humes Roberts, Pasadena, Cal., in September *Laryngoscope.*)

Dr. Roberts was led to look into the subject on account of so many deaths having occurred recently under general anesthesia in and around Los Angeles. The cause of death under general anesthesia has been ascribed by most investigators to the "Status Lymphaticus," or the lymphatic constitution. In nearly all cases in which the status lymphaticus has been demonstrated at autopsy, enlargement of the thymus gland has been found. This enlargement, associated with sudden death, was first mentioned by Bichat in 1723. Copp called attention to it in 1829. Jacobi, in this country, and Grawitz, in Germany, took

it up in 1888. In 1889, Paltauf, of the Vienna School, wrote "Hyperplasia of the thymus is physiologically, as well as anatomically, an element of a general hyperplasia, and is a result of a derangement of nutrition or metabolism, which causes a degeneration of the cardiac centers." He found at autopsy in addition to enlargement of the thymus, a hyperplasia of the entire lymphatic apparatus; enlarged nodes all over the body; of faucial and lingual tonsils; of the intestinal follicles; enlargement of the spleen, and its follicles; changes in the circulatory system. Here he noted a true hypoplasia; the aorta and small arteries were smaller and thinner than normal, and there were signs of cardiac dilitation.

Kolisco, who averages 2,000 autopsies a year, with about six of these dying from cardiac paralysis due to chloroform, says, "In these cases we always find the condition known as "habitus lymphaticus."

Many physicians, especially of the Vienna school, claim that it is possible to recognize the status lymphaticus. Enlarged faucial and pharyngeal tonsils are among the symptoms found in the status lymphaticus. Where they are of sufficient size to interfere with the growth and development of the patient, they must be removed with the least possible risk and shock. Most surgeons admit that general anesthesia is necessary to remove adenoids and tonsils properly. What anesthetic is safest? Halstead, in 1900, showed clearly the necessity of removing adenoids and tonsils under some sort of general anesthetic, in order to avoid the great shock to the child's nervous system. Halstead points out the great danger of administering chloroform to a child with enlarged tonsils and adenoids, whether being operated on for them or for something else. The lymphatic tendency is most marked in children before puberty, and it is during this time that chloroform is particularly unsafe. The saying that chloroform is the best anesthetic for children is amply refuted by statistics.

Sanford has reported a death following the removal of adenoids under cocaine. Were cocaine more generally used, many deaths would undoubtedly occur, as children are quite susceptible to its toxic effects.

Dr. W. J. McCardie has reported 30 deaths under general anesthesia in which the status lymphaticus was demonstrated, as follows: Under chloroform, 17; ether, 6; chloroform and ether, 5; nitrous oxide, 2. Thus, in 22 out of the 30 chloroform was used. The youngest patient was six months, the oldest 55 years. Twenty-four were under 20 years.

Dr. John Wyeth performs 75 per cent. of his operations under chloroform, but uses ether on children, as he considers chloroform too dangerous.

Dr. Hill Hastings went over the records of adenoids and tonsil operations at the New York Eye and Ear Infirmary, covering a period of five years, and thousands of operations, without finding a single death. Ether is the anesthetic invariably used. In personal communications, Drs. E. A. Crockett and Philip Hammond report that they have never known a death in Boston from ether in the adenoid or tonsil operation. In Boston, ether is the anesthetic always used and the patient is placed in the upright position for operation.

Among the thousands of operations covered by the reports of Hastings, Crockett, and Hammond, there must have been some patients with the status lymphaticus, yet there was not a fatal result, and all were operated on under ether.

A few miles from Los Angeles, in a seaside town of some 10,000 inhabitants, there have been three deaths within a year. These occurred during adenoid and tonsil operations, and chloroform was used in each case.

Dr. Roberts reports 17 deaths in and around Los Angeles as a result of anesthesia. Fif-

teen of these occurred under chloroform, one under ether, and one under bromide of ethyl. Four of the cases were adenoid and tonsil operations; all occurred under chloroform.

SUMMARY.

1. We should always keep in mind the possibility of the status lymphaticus being present in children who have enlarged superficial lymph glands, adenoids, or signs of rachitis.

2. In the status lymphaticus, *all* anesthetics are dangerous, but particularly chloroform.

3. In *all* operations on children, avoid chlor-

4. In operations for the removal of tonsils and adenoids, ether is the safest anesthetic to use. (M. M. C.)

BOOKS RECEIVED

A Text-Book of Operative Surgery.—Covering the Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery. Written for Students and Practitioners. By Warren Stone Bickham, Phar.M., M.D., Visiting Surgeon to Charity and Touro Hospitals, New Orleans. Octavo of 1206 pages, with 854 illustrations, entirely original. Philadelphia and London: W. B. Saunders Com., 1908. Cloth $6.50, net; Half Morocco $8.00, net.

Diseases of the Skin and the Eruptive Fevers.—By Jay Frank Schamberg, M.D., Professor of Dermatology and Infectious Eruptive Diseases, in the Philadelphia Polyclinic and College for Graduates in Medicine. Octavo of 534 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1908. Cloth $3.00, net.

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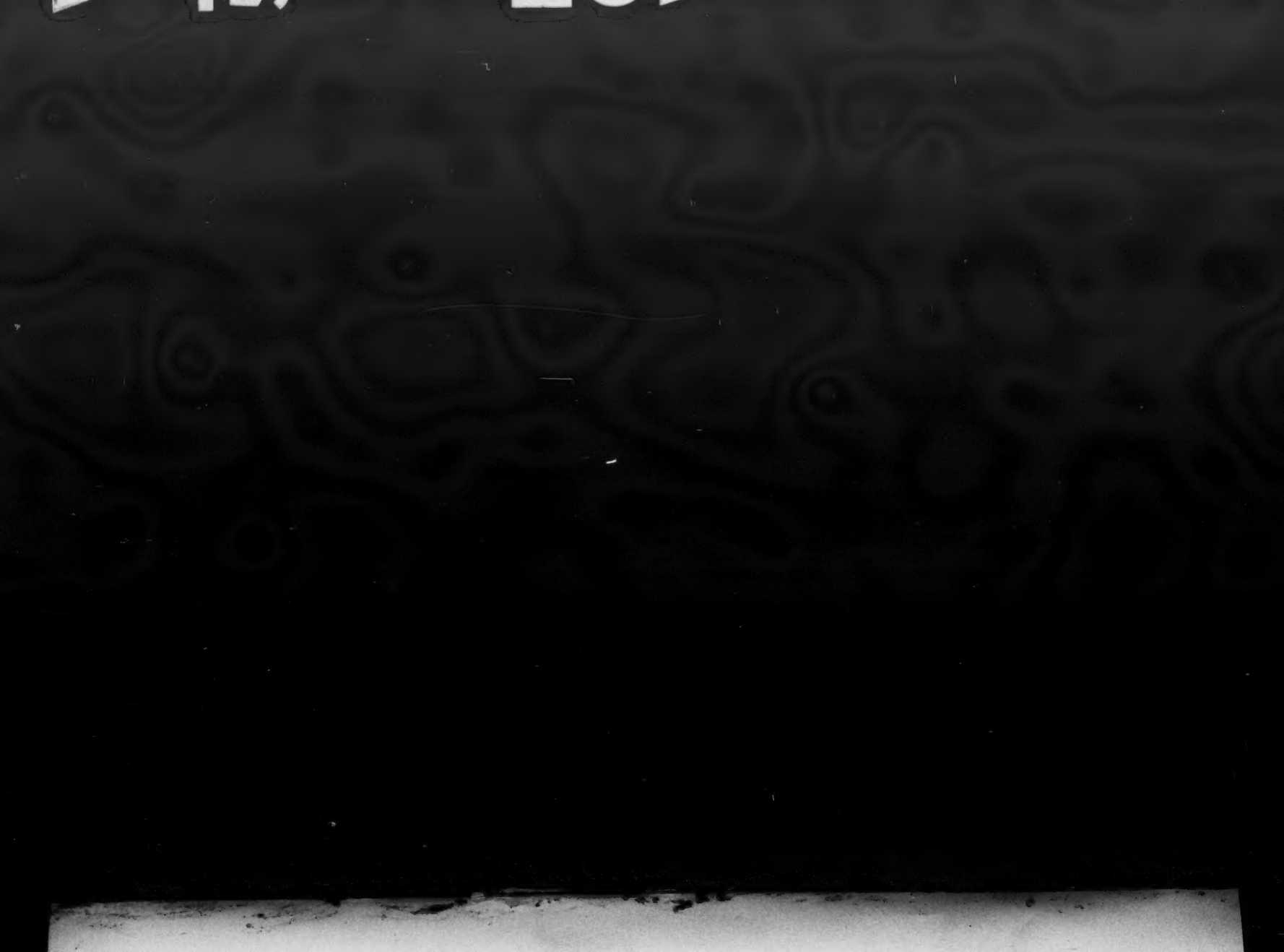

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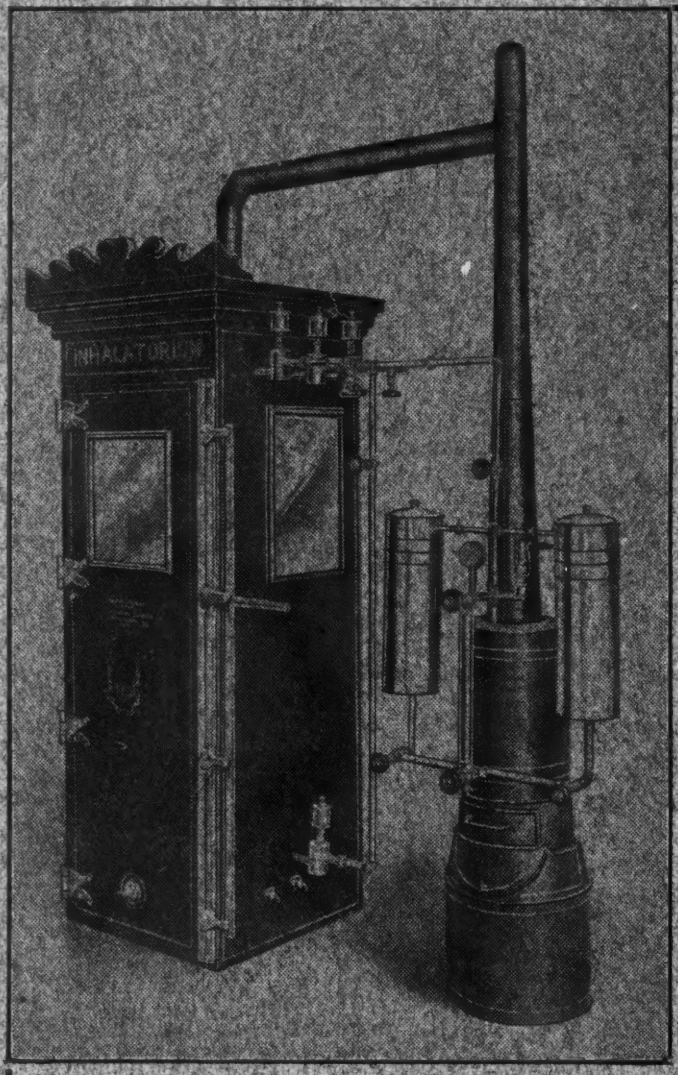

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